Federation Proceedings

VOLUME 11 *March 1952* NUMBER 1, PART II

THIRTY-SIXTH ANNUAL MEETING

NEW YORK CITY, APRIL 14–18, 1952

General Information

Registration

Registration will open at 9:00 A.M. Monday, April 14, on the Mezzanine Floors of the Hotel Statler and the Hotel New Yorker, and will remain open until 10:00 P.M. on that date. Desks will be open from 8:00 A.M. to 5:00 P.M. Tuesday, Wednesday, Thursday and Friday. The registration fee will be $5.00. Since the scientific sessions begin at 9:00 A.M. Tuesday, members are urged to complete registration on Monday if possible. The official badge issued at the registration desks must be worn to secure admission to scientific sessions and other activities of the Federation. There will be separate registration desks for ladies and non-professional guests.

Scientific Sessions

The scientific sessions of the six constituent Societies will be held in the Hotels Statler, New Yorker, McAlpin and Governor Clinton, and in Manhattan Center, adjacent to the New Yorker. They will open at 9:00 A.M. Tuesday, April 15, and will continue through Friday afternoon, April 18. Afternoon sessions will begin at 1:15 P.M. The Joint Session of the Federation will be held Tuesday evening, April 15, at 8:30, in the Promenade Ballroom at the Manhattan Center. The motion picture session is scheduled for Monday evening, April 14, in the Grand Ballroom of the Hotel New Yorker.

Copies of abstracts and programs will be on sale near the registration desks in each of the headquarters hotels. The price for the abstracts will be $3.00 and for the program $1.00.

Council and Executive Committee Meetings

Meetings of the Councils of the constituent Societies, the Federation Executive Committee, and other special committees, will begin on Sunday, April 13, and will continue through Thursday, April 17. A list of these meetings, with their locations, will be found on page 603.

Exhibits

Industrial scientific and member exhibits will be located in the Ballroom and Rotunda at the Hotel Statler. Hours for visiting these exhibits have been changed, and will be as follows this year: Monday, April 14, from 1:00 P.M. to 8:00 P.M.; Tuesday, Wednesday and Thursday, April 15–17, from 9:00 A.M. to 5:30 P.M.; Friday, April 18, from 9:00 A.M. to noon. A list of exhibitors with a brief description of their displays will be found on page 595 and following pages.

Special Functions

A list of special activities, dinners and group meetings will be found on page 603. Tickets to these may be purchased at a special desk in the Mezzanine of the Hotel Statler, near the registration desk. There will be no Federation "Mixer" at the New York City meeting.

Placement Service

The Placement Service office will be located in El Patio at the Hotel McAlpin, and will be open during the following hours: Sunday, April 13, from 2:00 P.M. to 5:00 P.M.; Monday through Thursday, April 14–17, from 8:15 A.M. to 5:00 P.M.; and Friday, April 18, from 8:15 A.M. to 1:00 P.M. Applicants may register from Sunday through Tuesday; registration for employers will be Monday through Wednesday. Interviews will be scheduled Tuesday through Friday during the hours the Placement Service office is open. To use the interview facilities, an employer must be an annual subscriber to the Placement Service lists or to the single February list of candidates.

Advance registrations may be made until April 1 with the Placement Service, Federation of American Societies for Experimental Biology, 2101 Constitution Avenue, Washington 25, D.C.

Headquarters Hotels

The Hotel Statler will be headquarters for the American Physiological Society, the American Society for Pharmacology and Experimental Therapeutics and the American Society for Experimental Pathology; the Hotel New Yorker for the American Society of Biological Chemists, the American Institute of Nutrition and the American Association of Immunologists.

B & Z Library

Federation Program

JOINT SESSION OF THE FEDERATION

TUESDAY, APRIL 15, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Chairman: D. B. Dill

TOPIC: WORLD FOOD PROBLEMS

Observations in India. W. H. FORBES. *Fatigue Laboratory, Harvard University, Boston, Mass.*

Agricultural and industrial possibilities of increasing the food supply. L. A. MAYNARD. *School of Nutrition, Cornell University, Ithaca, N. Y.*

Facts, fables and fallacies on feeding the world population. SAMUEL BRODY. *University of Missouri College of Agriculture, Columbia.*

MOTION PICTURES

MONDAY, APRIL 14, 8:30 P.M.—NEW YORKER, GRAND BALLROOM

Chairman: C. R. Treadwell

Pharmacologic studies on canine tremor syndrome. CARL A. BUNDE, BENEDICT E. ABREU, GEORGE R. BURCH* AND ALICE B. RICHARDS.* *Research Department, Pitman-Moore-Company, Indianapolis, Ind.*

Effects of beta and x-irradiation on circulation in hamster cheek pouch. GEORGE P. FULTON, BRENTON R. LUTZ, DAVID L. JOFTES* AND FREDERICK W. MAYNARD.* *Department of Biology, Boston University, Boston, Mass.*

Higher centers of statokinetic regulation. W. R. HESS. *University of Zurich, Zurich, Switzerland.*

Effect of drugs on tremor in monkeys. VERNON G. VERNIER (introduced by KLAUS R. UNNA). *Department of Pharmacology, University of Illinois College of Medicine, Chicago.*

Persistence of active vasomotion after denervation. R. L. WEBB* AND P. A. NICOLL. *Departments of Anatomy and Physiology, Indiana University School of Medicine, Indianapolis.*

Precipitation of 'abstinence syndromes' by single doses of N-allylnormorphine in addicts. ABRAHAM WIKLER, R. L. CARTER,* H. F. FRASER* AND HARRIS ISBELL. *NIMH Addiction Research Center, U. S. Public Health Service Hospital, Lexington, Ky.*

Use of stereoencephalotome in man for subcortical stimulation, recording of potentials and production of lesions. H. T. WYCIS* AND E. A. SPIEGEL. *Departments of Experimental Neurology and of Neurosurgery, Temple University School of Medicine and Hospital, Philadelphia, Pa.*

An asterisk* following an author's name indicates "by invitation."

THE AMERICAN PHYSIOLOGICAL SOCIETY

Sixty-fourth Annual Meeting

New York City, April 14–18, 1952

(An asterisk following an author's name indicates "by invitation".)*

Tuesday Morning, April 15, 9:00 a. m.

Hypertension

TUESDAY, 9:00 A.M.—MCALPIN, CRYSTAL ROOM

Chairman: G. E. Wakerlin

1. Brain stem pressor responses in normal and hypertensive dogs. J. D. MCQUEEN* AND A. EARL WALKER. *Div. of Neurological Surgery, Johns Hopkins Hosp., Baltimore, Md.*
2. Effect of endocrine factors on experimental renal hypertension. ROGER W. SEVY* AND GEORGE E. WAKERLIN. *Dept. of Physiology, Univ. of Illinois College of Medicine, Chicago.*
3. Cortisone and hypertensive hyalinosis in the rat. C. E. HALL AND O. HALL. *Carter Physiology Lab., Univ. of Texas Med. Branch, Galveston.*
4. Effects of diet selection and fasting on hypertensive rats. EDWARD P. RADFORD, JR. (introduced by E. M. LANDIS). *Dept. of Physiology, Harvard Med. School, Boston, Mass.*
5. Nutritional factors in hemodynamics; hypertension during PGA administration in albino rats. RICHARD E. LEE, ELIZABETH A. HOLZE* AND SACHIKO TANAKA.* *Dept. of Medicine, New York Hosp., New York City and Natl. Heart Inst., Bethesda, Md.*
6. Low sodium diet and resin therapy in hypertension. R. S. GRIFFITH,* O. M. HELMER AND K. G. KOHLSTAEDT. *Lilly Lab. for Clin. Research, General Hosp., Indianapolis, Ind.*
7. Total body sodium in hypertension in the rat. LEO A. SAPIRSTEIN AND ROBERT GREENE.* *Dept. of Physiology, Ohio State Univ., Columbus.*
8. Relation of pyridoxine deficiency and hypertension in the rat. NORMAN S. OLSEN AND WILLIAM E. MARTINDALE.* *Dept. of Biochemistry, Vanderbilt Univ., and Research Lab., Thayer Veterans Administration Hosp., Nashville, Tenn.*
9. Cerebral vascular resistance, oxygen uptake, jugular venous oxygen saturation and cerebral oxygen tension in patients with essential hypertension before and after a placebo intravenous injection. JOSEPH H. HAFKENSCHIEL, CARL K. FRIEDLAND* AND CHARLES W. CRUMPTON.* *Robinette Fndn. Med. Clinic, Hosp. of Univ. of Pennsylvania and Dept. of Pharmacology, Univ. of Pennsylvania Med. School, Philadelphia.*
10. Plasma renin concentration of patients treated with the artificial kidney. FLORENCE W. HAYNES, JOHN P. MERRILL* AND WALTER T. GOODALE. *Med. Dept., Peter Bent Brigham Hosp. and Harvard Med. School, Boston, Mass.*
11. Serum and aortal lipid changes in atherosclerotic hens treated with adenosine-5-monophosphate. LAWRENCE J. MILCH,* ROBERT F. REDMOND,* WILLIAM W. CALHOUN,* HERMAN I. CHINN AND CARDIOVASCULAR RESEARCH GROUP. *Dept. of Pharmacology and Biochemistry, USAF School of Aviation Medicine, Randolph AFB, Tex.*

Blood Volume: Regulation. Hemorrhage, Infusion, Shock

TUESDAY, 9:00 A.M.—MCALPIN, ROOF GARDEN

Chairman: Simon Rodbard

12. Cross-resistence to hemorrhagic shock in rats made resistant to drum-trauma; relation to hepatic VDM inactivation mechanisms.

EPHRAIM SHORR, SILVIO BAEZ, DELILAH B. METZ* AND BENJAMIN W. ZWEIFACH. *Dept. of Medicine, Cornell Univ. Med. College and New York Hosp., New York City.*

13. Effect of burn shock on concentration of nonprotein sulfhydryl in mouse liver. WAYNE LINKENHEIMER* AND LYLE V. BECK. *Dept. of Physiology and Pharmacology, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*
14. Relation of size of shock dose of antigen to blood pressure fall and heparin release in canine anaphylaxis. RICHARD P. WHITE AND PARKE H. WOODARD (introduced by O. O. STOLAND). *Univ. of Kansas Dept. of Physiology, Lawrence.*
15. Critical study of some physiological factors responsible for differences in estimates of total blood volume given by plasma volume and plasmacrit and by cell volume and hematocrit determinations. E. B. REEVE,* M. I. GREGERSEN, T. H. ALLEN AND H. SEAR.* *Dept. of Physiology, Columbia Univ., College of Physicians and Surgeons, New York City.*
16. Measurement of bovine plasma volume with T-1824 and estimation of the blood volume. MONICA REYNOLDS (introduced by F. H. MCCUTCHEON). *School of Veterinary Medicine, Univ. of Pennsylvania, Philadelphia.*
17. Spectrophotometric determination of T-1824 in whole hemolyzed blood. JOHN W. NICHOLSON, III AND GABRIEL G. NAHAS (introduced by NORMAN M. KEITH). *Mayo Fndn., Univ. of Minnesota, and Mayo Clinic, Rochester.*
18. Measurement of plasma volume in the dog with high concentrations of T-1824. THOMAS H. ALLEN AND MAGNUS I. GREGERSEN. *Dept. of Physiology, Columbia Univ., College of Physicians and Surgeons, New York City.*
19. Effect of Dibenamine on humoral and vascular changes in dogs subjected to hemorrhagic shock. BENJAMIN W. ZWEIFACH, SILVIO BAEZ AND EPHRAIM SHORR. *Dept. of Medicine, Cornell Univ. Med. College and New York Hosp., New York City.*
20. Effectiveness of NaCl solutions in combating shock and promoting 10-day survival of severely burned rats. MILES D. MCCARTHY AND NANCY NEWLIN (introduced by I. S. RAVDON). *Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*
21. Blood volume in the hypothermic dog. HENRY D'AMATO* AND A. H. HEGNAUER. *Boston Univ. School of Medicine, Boston, Mass.*
22. Protective action of Dibenamine against the fatal outcome of hemorrhagic and traumatic shock in rats. SILVIO BAEZ, BENJAMIN W. ZWEIFACH AND EPHRAIM SHORR. *Dept. of Medicine, Cornell Univ. Med. College and New York Hosp., New York City.*

Gastrointestinal: Motility, and Secretion of Associated Organs

TUESDAY, 9:00 A.M.—MCALPIN, GRAND BALLROOM

Chairman: R. K. Lim

23. Alleged deterioration of intestinal transplants with time. RAYMOND A. RUSSELL* AND E. S. NASSET. *Dept. of Physiology and Vital Economics, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*
24. Effects of altitude and diet on the CO_2 content of flatus in man. F. R. STEGGERDA, W. C. CLARK* AND I. E. DANHOF.* *Dept. of Physiology, Univ. of Illinois, Urbana.*
25. Comparison of intraluminal pressures and motility patterns in the gastrointestinal tract of human beings when recorded by balloon and direct (electrical transducer) pressure systems. NICHOLAS C. HIGHTOWER, JR. (introduced by CHARLES F. CODE). *Mayo Fndn., Univ. of Minnesota, Rochester.*
26. Interrelations of the pressures of the gut lumen, the abdominal cavity and the thoracic cavity. J. P. QUIGLEY, D. A. BRODY* AND J. M. HUDGINS.* *Div. of Physiology, Univ. of Tennessee, Memphis.*
27. Gastric and esophageal temperatures in man. HERBERT SHAPIRO AND EMERY K. STONER.* *Dept. of Physical Medicine, Univ. of Pennsylvania, Philadelphia.*
28. Quantitative tests for salivary amylase activity by a new method. E. ALFRED WOLF (introduced by T. K. KRUSE). *Dept. of Biological Sciences, Univ. of Pittsburgh, Pittsburgh, Pa.*
29. Phototurbidimetric determination of pancreatic amylase. PAUL GUTH,* S. A. KOMAROV AND HARRY SHAY. *Samuel S. Fels Research Inst., Temple Univ. School of Medicine, Philadelphia, Pa.*
30. Trypsin inhibitor in pancreatic juice. MARTIN KALSER (introduced by A. C. IVY). *Dept. of Clin. Science, Univ. of Illinois College of Medicine, Chicago.*
31. Response of the dog's pancreas to secretin during periods of induced hyperglycemia. J. O. CRIDER AND J. E. THOMAS. *Dept. of Physiology, Jefferson Med. College of Philadelphia, Philadelphia, Pa.*
32. Effect of amino acids on cholic acid synthesis in bile fistula dogs. G. WALTER* AND J. H. ANNEGERS. *Dept. of Physiology, Northwestern Univ. Med. School, Chicago, Ill.*
33. Effect of partial hepatectomy, protein reali-

mentation, bile, 1% methionine diet, ether, and chloroform, on biliary secretion in the rat. BERNARD FISHER,* JOAN W. ZERBE* AND HARRY M. VARS. *Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.* (Biochem.)

Autonomic Nervous System and Temperature Regulation

TUESDAY, 9:00 A.M.—McALPIN, RED ROOM

Chairman: Gordon K. Moe

34. Significance of areas of low ESR. PRICE E. THOMAS* AND IRVIN M. KORR. *Kirksville College of Osteopathy and Surgery, Kirksville, Mo.*
35. Survival of sympathetic nerve fibers during chronic electrical stimulation. W. G. KUBICEK, G. GULLICKSON,* M. E. OLSON* AND F. J. KOTTKE. *Div. of Physical Medicine, Univ. of Minnesota Med. School, Minneapolis.*
36. Skin resistance changes following stimulation of the hypothalamus. FRANK HARRISON AND S. R. BRUESCH. *Div. of Anatomy, Univ. of Tennessee, Memphis.*
37. Physiologic effects of anterolateral chordotomy in man. GRACE M. ROTH, DONALD A. JOHNSON AND WINCHELL McK. CRAIG.* *Mayo Fndn., Univ. of Minnesota, and Mayo Clinic, Rochester.*
38. Experimental hypothalamic 'hyperphagia' and 'hypodipsia.' J. A. F. STEVENSON AND D. MONTEMURRO.* *Dept. of Physiology, Univ. of Western Ontario Faculty of Medicine, London, Ontario, Canada.*
39. Temperature changes in humans during exposure to a lowered partial pressure of oxygen in a cool environment. ARNOLD L. BROWN, JR.,* GORDON F. VAWTER* AND JOHN P. MARBARGER. *Aeromed. and Physical Environment Lab., Univ. of Illinois, Chicago.*
40. Temperature regulation in the conscious dog during thermal stress. H. E. EDERSTROM AND A. C. HIGGINBOTHAM. *Dept. of Physiology, St. Louis Univ. Med. School, St. Louis, Mo.*
41. Modifiability of the diurnal body temperature and heart rate curves. NATHANIEL KLEITMAN. *Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*
42. Sweating patterns on the lower extremity of man elicited by stimulation of the sympathetic trunk. W. C. RANDALL, W. F. ALEXANDER,* K. E. COLDWATER,* A. F. HERTZMAN AND J. W. COX.* *Physiology Labs., St. Louis Univ. and Surgical Service of Veterans Administration Hosp., Jefferson Barracks, St. Louis, Mo.*
43. Fatigue of the sweat glands. JØRN HESS THAYSEN, IRVING L. SCHWARTZ AND VINCENT P. DOLE (introduced by DAVID P. C. LLOYD). *Hosp. of Rockefeller Inst. for Med. Research, New York City.*
44. Evidence that urea is excreted in human sweat by a passive process. IRVING L. SCHWARTZ, JØRN HESS THAYSEN AND VINCENT P. DOLE (introduced by HERBERT S. GASSER). *Hosp. of Rockefeller Inst. for Med. Research, New York City.*
45. Effect of skin temperature and hydrostatic pressure on evaporation through excised dog skin. C. N. PEISS AND D. L. DAVIS (introduced by A. B. HERTZMAN). *Dept. of Physiology, St. Louis Univ. School of Medicine, St. Louis, Mo.*
46. Variations of oxygen consumption and rectal temperature of dogs during Nembutal anesthesia. GABRIEL G. NAHAS AND ALLAN HEMINGWAY. *Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

Kidney: Water and Electrolytes

TUESDAY, 9:00 A.M.—McALPIN, GREEN ROOM

Chairman: M. I. Gregersen

47. Renal sodium reabsorption in dogs under conditions of loading with various sodium salts. SAMUEL A. CORSON, ELIZABETH O'LEARY CORSON* AND ABRAHAM L. SIEGEL.* *Kirksville College of Osteopathy and Surgery, Kirksville, Mo.*
48. Effect of hemoglobin and adrenaline on urinary pH and electrolytes. JORGEN U. SCHLEGEL, JOSEPH J. BETHEIL* AND A. LEONARD BLOCH.* *Depts. of Surgery and Biochemistry, Buswell Urological Research Lab., Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*
49. Effect of 'Benemid' (*p*-(di-*n*-propylsulfanyl)-benzoic acid) on urate clearance and other discrete renal functions in gouty subjects. J. H. SIROTA, T. F. YU AND A. B. GUTMAN. *First Med. Service, Mount Sinai Hosp., New York City.*
50. Distribution, excretion and metabolism of the nitrate ion administered intravenously as $NaNO_3$. EDWIN P. HIATT AND INEZ GREENE.* *Dept. of Physiology, Univ. of North Carolina School of Medicine, Chapel Hill.*
51. Electrolyte metabolism of rabbit kidney cortex slices. GILBERT H. MUDGE. *Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, New York City.*
52. Effect of pressor agents on renal water and electrolyte excretion in man. J. F. NICKEL,* C. McC. SMYTHE* AND S. E. BRADLEY. *Dept. of Medicine, Columbia Univ. College of Phy-*

sicians and Surgeons, and Presbyterian Hosp., New York City.

53. Factors contributing to renal enlargement following uretero-duodenostomy and contralateral nephrectomy. KHALIL G. WAKIN, MELVIN A. BLOCK AND FRANK C. MANN. *Mayo Fndn., Univ. of Minnesota, Rochester.*
54. Sex differences in the pathogenesis of nephrotoxic globulin (NTG) nephritis. RICHARD W. LIPPMAN, HELEN U. MARTI* AND E. ELMO JACOBS.* *Inst. for Med. Research, Cedars of Lebanon Hosp., Los Angeles, Calif.*
55. Effect of adrenalectomy and replacement therapy on ascites formation in dogs. JAMES O. DAVIS, DAVID S. HOWELL AND JAMES L. SOUTHWORTH (introduced by JAMES H. BAXTER). *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, and U. S. Public Health Service Hosp., Baltimore, Md.* (Pharmacol.)
56. Experience with intermittent peritoneal dialysis for keeping alive dogs without kidneys. C. RILEY HOUCK. *Div. of Physiology, Univ. of Tennessee, Memphis.*
57. Anemia of renal insufficiency (uremia) as observed in dogs following bilateral nephrectomy and maintenance by peritoneal irrigation: evidence for a hemolytic mechanism. E. E. MUIRHEAD, J. A. STIRMAN, F. JONES AND W. LESCH.
58. Blood pressure of bilaterally nephrectomized dogs. JACK R. LEONARDS AND CHARLES R. HEISLER.* *Dept. of Biochemistry, Western Reserve Univ., Cleveland, Ohio.* (Biochem.)

Radiation Biology I

TUESDAY, 9:00 A.M.—McALPIN, COLONIAL ROOM

Chairman: L. F. Nims

59. Distribution of administered Rb^{86} carbonate in the mouse, guinea pig, dog and man. A. STONE FREEDBERG, H. BENAIM PINTO AND ALBERT ZIPSER (introduced by HERRMAN BLUMGART). *Yamins Research Lab., Beth Israel Hosp., and Dept. of Medicine, Harvard Med. School, Boston, Mass.*
60. Comparative uptake of carrier and carrier-free Ca^{45} in rats. R. V. TALMAGE, F. W. KRAINTZ, L. K. WANG AND L. KRAINTZ (introduced by H. E. HOFF). *Rice Inst., Houston, Tex.*
61. Calcium metabolism of growing and mature bone. JAMES S. ARNOLD (introduced by GEORGE SAYERS). *Radiobiology Lab., Univ. of Utah College of Medicine, Salt Lake City.*
62. Penetration of sodium and water into bone as measured with radiosodium and D^2O. I. S. EDELMAN, A. H. JAMES AND F. D. MOORE (introduced by J. R. PAPPENHEIMER). *Peter Bent Brigham Hosp. and Harvard Med. School, Boston, Mass.*
63. Physiological status of bone carbonate. AKIRA NAKAO AND DONALD L. BUCHANAN (introduced by LESTER R. DRAGSTEDT). *Div. of Biological and Med. Research, Argonne Natl. Lab., Chicago, Ill.*
64. Bone carbonate turnover. DONALD L. BUCHANAN AND AKIRA NAKAO (introduced by HENRY T. RICKETTS). *Div. of Biological and Med. Research, Argonne Natl. Lab., Chicago, Ill.*
65. Phospholipide metabolism in phlorizinized dogs. N. R. DILUZIO* AND D. B. ZILVERSMIT. *Div. of Physiology, Univ. of Tennessee, Memphis.*
66. Effect of x-irradiation on the incorporation of inorganic P^{32} into phospholipids by rat liver slices. CECIL ENTENMAN AND ERNEST O. WIENMAN (introduced by LESLIE L. BENNETT). *Biological and Med. Sciences Div., U. S. Naval Radiological Defense Lab., San Francisco, Calif.*
67. Ethanol oxidation by rat liver slices. E. J. MASORO AND J. R. BIRCHARD (introduced by G. H. ETTINGER). *Dept. of Physiology, Queen's Univ., Kingston, Ontario, Canada.*
68. Enlargement of the liver following whole body x-irradiation. HELEN SUPPLEE AND CECIL ENTENMAN (introduced by JAMES M. D. OLMSTED). *Biological and Med. Sciences Div., U. S. Naval Radiological Defense Lab., San Francisco, Calif.*
69. Radiation effects in isolated organs. I. Effects of x-radiation on bile flow, performance and survival in the isolated rat liver and comparison with several vasoactive agents. RALPH W. BRAUER, G. F. LEONG AND R. J. HOLLOWAY. *Biological and Med. Sciences Div., U. S. Naval Radiological Defense Lab., San Francisco, Calif.* Pharmacol.)

Tuesday Afternoon, April 15, 1952

Circulation: Epinephrine, Nor-epinephrine, Chemistry, Flow, etc.

TUESDAY, 1:15 P.M.—McALPIN, CRYSTAL ROOM

Chairman: G. H. Acheson

70. Relationship between total coronary flow, arterial blood pressure and cardiac output. G. R. GRAHAM AND F. WILLIAMS (introduced by L. N. KATZ). *Med. Research Inst., Michael Reese Hosp., Chicago., Ill.*

71. Some vascular responses in the dog to *l*-epinephrine and *l*-nor-epinephrine. KENNETH E. JOCHIM. *Dept. of Physiology, Univ. of Kansas, Lawrence.*

72. Effects of epinephrine and nor-epinephrine on coronary blood-O_2 exchange. E. L. FOLTZ, J. W. WEST, H. E. LESSNER, P. H. BULLE AND M. E. HESS (introduced by D. M. AVIADO, JR.). *Lab. of Pharmacology and Dept. of Medicine, Univ. of Pennsylvania, Philadelphia.*

73. Comparison of effect of *l*-epinephrine and *l*-nor-epinephrine on the denervated heart of unanesthetized dogs. RUVEN GREENBERG AND CHARLES B. LAMBETH.* *Carter Physiology Lab., Univ. of Texas Med. Branch, Galveston.*

74. Effects of *l*-arterenol and *l*-epinephrine on normal and denervated kidney. ROBERT M. BERNE. *Dept. of Physiology, Western Reserve Univ. Med. School, Cleveland, Ohio.*

75. Free longitudinal vibrations in aortic strips. RICHARD W. LAWTON AND ALLEN L. KING.* *Dept. of Physiology, Cornell Univ. Med. College, New York City, and Dept. of Physics, Dartmouth College, Hanover, N. H.*

76. Certain aspects of reflex and mechanical influences on venous circulation. LYSLE H. PETERSON. *Dept. of Physiology, Univ. of Pennsylvania Med. School, Philadelphia.*

77. A sensitive method for assaying vasoactive substances in the rat hindlimb. W. R. KINGSOLVER,* A. DONTAS,* AND S. W. HOOBLER. *Dept. of Medicine, Univ. of Michigan Med. School, Ann Arbor.*

78. Effect of hyperoxygenation on rate of blood flow in perfusion of bovine mammary glands. SOMA KUMAR,* S. LAKSHMANAN,* E. A. CORBIN* AND J. C. SHAW. *Dairy Dept., Univ. of Maryland, College Park.*

79. Colloid disappearance rate as a measure of liver blood flow. ERNEST L. DOBSON,* GEORGE F. WARNER* AND HARDIN B. JONES. *Donner Lab., Univ. of California, Berkeley.*

Heart: E.C.G., Conduction, etc.

TUESDAY, 1:15 P.M.—McALPIN, WINTER ROOF GARDEN

Chairman: H. C. Wiggers

80. Observations on the genesis of the U wave of the electrocardiogram. E. LEPESCHKIN (introduced by W. RAAB). *Div. of Exper. Medicine, Univ. of Vermont, Burlington.*

81. Instantaneous equipotential data during the T interval on the body surface of the normal adult human. A. MAURO,* L. H. NAHUM AND RAJINDER S. SIKAND.* *Lab. of Physiology, Yale Univ. School of Medicine, New Haven, Conn.*

82. Effect of relative body weight on the normal electrocardiogram. ERNST SIMONSON AND ANCEL KEYS. *Lab. of Physiological Hygiene, Univ. of Minnesota, Minneapolis.*

83. Metabolism of isotopic lactate by the blood-perfused isolated heart. H. MEAD CAVERT AND JOHN A. JOHNSON (introduced by W. E. PETERSEN). *Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

84. Contraction of heart muscle. JANE SANDS ROBB. *Dept. of Pharmacology, New York State College of Medicine, Syracuse, N. Y.*

85. Electrocardiograms of small mammals. ELNA LOMBARD (introduced by J. W. REMINGTON). *Dept. of Physiology, Univ. of Wisconsin, Madison.*

86. Electrocardiograms of the opossum at low temperatures. ROLAND M. NARDONE AND CHARLES G. WILBER (introduced by R. H. K. FOSTER). *Biological Labs., St. Louis Univ., St. Louis, Mo.*

87. Electrocardiogram of the horse. D. K. DETWEILER (introduced by G. P. McCOUCH). *Dept. of Physiology and Pharmacology, Univ. of Pennsylvania Veterinary School, Philadelphia.*

88. Direct visual examination of stereovector-electrocardiograms. OTTO H. SCHMITT AND R. B. LEVINE.* *Depts. of Zoology and Physics, Univ. of Minnesota, Minneapolis.*

89. Electrocardiograms which represent projection of the vectorcardiogram on any axis of the Einthoven triangle. DANIEL A. BRODY,* ROBERT C. LITTLE AND HALL S. TACKET.* *Depts. of Medicine and Physiology, Univ. of Tennessee, Memphis.*

90. Epicardial unipolar electrograms from the Dog's right atrium. ANTHONY A. KATTINE

(introduced by JOHN C. SCOTT). *Dept. of Physiology, Hahnemann Med. College, Philadelphia, Pa.*

91. Spreak of electrical activity through wall of mammalian ventricle. ALLEN M. SCHER, RICHARD R. PATON AND ALLAN C. YOUNG (introduced by HENRY N. HARKINS). *Dept. of Physiology and Biophysics, Univ. of Washington School of Medicine, Seattle, Washington.*

Gastrointestinal: Secretion

TUESDAY, 1:15 P.M.—McALPIN, GRAND BALLROOM

Chairman: L. A. Crandall, Jr.

92. A quantitative demonstration of effect of variations in gastric emptying and secretion on acidity of gastric contents. J. N. HUNT (introduced by M. O. LEE). *Guy's Hospital, London, England.*
93. Effect of experimental hypothyroidism upon gastric secretion in the rat. DAVID SUN,* HARRY SHAY, HERMAN SIPLET* AND MARGOT GRUENSTEIN.* *Fels Research Inst., Temple Univ. School of Medicine, Philadelphia, Pa.*
94. Assay of gastric secretory depressants in the unanesthetized cat. M. H. F. FRIEDMAN, H. HOCHSCHILD* AND J. B. CARPENTER.* *Jefferson Med. College, Philadelphia, Pa.*
95. Inhibition of acid secretion in dogs by carbonic anhydrase inhibitor, #6063. HENRY D. JANOWITZ, HENRY COLCHER* AND FRANKLIN HOLLANDER. *Gastroenterology Research Lab., Mount Sinai Hosp., New York City.*
96. Effects of carbonic anhydrase inhibitor #6063 on electrolyte concentration in canine gastric juice. HENRY COLCHER,* HENRY D. JANOWITZ AND FRANKLIN HOLLANDER. *Gastroenterology Research Lab., Mount Sinai Hosp., Columbia Univ., Div., Goldwater Memorial Hosp., and Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, New York City.*
97. Adenteric reflex and gastric inhibitors. R. K. S. LIM, E. A. NOVAK, FRANK WALSH (introduced by JOHN FERGUSON). *Dept. of Physiology and Pharmacology, Creighton Univ., Omaha, Nebr.*
98. Unconditioned orogastric secretory reflex. K. J. LANGLOIS,* R. K. S. LIM, GENE ROSIERE,* D. I. STEWART* AND D. L. STUMPFF.* *Dept. of Physiology, Creighton Univ., Omaha, Nebr.*
99. Histological changes in gastric mucosa produced by feeding and relationship of these to a working hypothesis of growth pattern changes. RHODA GRANT. *Dept. of Clinical Science, Univ. of Illinois College of Medicine, Chicago.*
100. Electrical resistance of the stomach. WARREN S. REHM AND HILDE SCHLESINGER.* *Dept. of Physiology, Univ. of Louisville, Louisville, Ky.*
101. Glycemic levels and rumen development in calves. J. A. DYE AND D. ORSINI.* *Dept. of Physiology, Cornell Univ., Ithaca, N. Y.*

Endocrine: Gonads, Steroids, Pituitary I

TUESDAY, 1:15 P.M.—McALPIN, RED ROOM

Chairman: F. D. W. Lukens

102. Effects of delayed fertilization on segmenting ova, blastocysts, and fetuses in the rabbit. M. C. CHANG. *Worcester Fndn. for Experimental Biology and Dept. of Biology, Boston Univ., Boston, Mass.*
103. Relation of dietary protein to reproduction in the rat. HERBERT M. EVANS AND MARJORIE M. NELSON. *Inst. of Experimental Biology, Univ. of California, Berkeley.*
104. Effects of starvation on placentoma reaction in the rat. VINCENT J. DEFEO* AND IRVING ROTHCHILD. *Dept. of Physiology, Ohio State Univ. College of Medicine, Columbus.*
105. Separation of ketosteroids in a 24-hour urine sample. BETTY L. RUBIN AND HARRIS ROSENKRANTZ (introduced by GREGORY PINCUS). *Worcester Fndn. for Experimental Biology, Shrewsbury, Mass.*
106. Effects of adrenal steroid compound F in depancreatized, cholesterol-fed cockerels. JEREMIAH STAMLER. *Cardiovascular Dept., Med. Research Inst., Michael Reese Hosp., Chicago, Ill.*
107. Hormone excretion in diffuse liver disease. C. DOHAN, E. RICHARDSON,* L. BLUEMLE, JR., AND P. GYORGY.* *Dept. of Medicine and Nutritional Service, Univ. of Pennsylvania, Philadelphia.*
108. Fate of other pituitary hormones during purification of corticotropin. M. S. RABEN,* I. N. ROSENBERG* AND E. B. ASTWOOD. *Dept. of Medicine, Tufts College Med. School, and the New England Center Hosp., Boston, Mass.*
109. Methods of fractionating Pitressin. MARY E. DUMM, STEPHEN H. LESLIE* AND BERTRAM LAKEN.* *College of Medicine, New York Univ.-Bellevue Med. Center, New York City.*
110. Anterior pituitary gland, growth hormone and secretin content of rat intestine. J. E. C. DORCHESTER* AND R. E. HAIST. *Dept. of Physiology, Univ. of Toronto, Toronto, Canada.*
111. Hypophyseal involvement in response to O_2 at high pressure. JOHN W. BEAN AND PAUL JOHNSON.* *Dept. of Physiology, Univ. of Michigan, Ann Arbor.*

112. Influence of dietary protein levels in starvation on the endocrine system. K. E. PASCHKIS, A. CANTAROW, J. RIVERO-FONTAN* AND E. WEST.* *Div. of Endocrine and Cancer Research, Jefferson Med. College, Philadelphia, Pa.*

Kidney: Glomerular and Tubular Function I

TUESDAY, 1:15 P.M.—McALPIN, GREEN ROOM

Chairman: Homer W. Smith

113. Effect of acute changes in glomerular filtration rate on water and electrolyte excretion. A. SURTSHIN, C. B. MUELLER* AND H. L. WHITE. *Depts. of Physiology and Surgery, Washiongton Univ., St. Louis, Mo.*

114. Mechanism of reduction in electrolyte and water excretion resulting from uretral pressure elevation. EWALD E. SELKURT, MARTIN BRANDFONBRENER* AND HERMAN M. GELLER.* *Dept. of Physiology, Western Reserve School of Medicine, Cleveland, Ohio.*

115. Trauma and creatinine excretion. JAMES D. HARDY. *Harrison Dept. of Surgical Research, and Surgical Services, Univ. Hosp., Univ. of Pennsylvania, Schools of Medicine, Philadelphia.*

116. Factors influencing the excretion of chloride. WALTER H. CARGILL (introduced by CLINTON KNOWLTON). *Lawson V. A. Hospital, Chamblee, Ga.*

117. Elimination (metabolism and excretion) of *p*-aminobenzoic acid by the dog. KARL H. BEYER, ELIZABETH K. TILLSON,* HORACE F. RUSSO,* GRACE S. SCHUCHARDT* AND ALICE A. PITT.* *Research Div., Sharp & Dohme, Inc., West Point, Pa.*

118. Effects of cortisone administration on renal tubular capacity for reabsorption of phosphate and excretion of potassium and titratable acid. KATHLEEN E. ROBERTS (introduced by JOHN MACLEOD). *Dept. of Physiology, Cornell Univ. Med. College, New York City.*

119. No demonstrable glomerular-proximal tubule imbalance in chronic Pyelonephritis. ALEXANDER J. MICHIE AND CATHERINE R. MICHIE (introduced by J. E. RHOADS). *Dept. of Physiology, New York Univ. College of Medicine, New York City, and Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

120. Movement of D_2O and Na^{22} across the frog renal tubule in the direction of capillary to tubular lumen. T. HOSHIKO,* R. E. SWANSON* AND M. B. VISSCHER. *Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

121. Distribution of infused sodium bicarbonate solution in man. R. B. SINGER, J. K. CLARK, A. P. CROSLEY, JR., AND E. S. BARKER (introduced by D. W. WILSON). *Depts. of Research Medicine and Medicine, Univ. of Pennsylvania, Philadelphia.*

122. Kidney function in the kangaroo rat. BODIL SCHMIDT-NIELSEN. *Kettering Lab., Univ. of Cincinnati, Cincinnati, Ohio.*

123. Significance of carbon dioxide tension in urine. THOMAS J. KENNEDY, JR.,* JACK ORLOFF* AND ROBERT W. BERLINER. *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

124. Evaluation of methods measuring creatinine. EMANUEL E. MANDEL AND FLORENCE L. JONES (introduced by JOHN L. PATTERSON, JR.). *Communicable Disease Center, U. S. Public Health Service, and Dept. of Pathology, Emory Univ. School of Medicine, Atlanta, Ga.*

Radiation Biology II

TUESDAY, 1:15 P.M.—McALPIN, COLONIAL ROOM

Chairman: Janet Howell Clark

125. Distribution of I^{131}- and C^{14}-labeled thyroxine in rat liver cell fractions, and elimination by way of bile, urine and expired air. HARRY J. LIPNER,* HOWARD M. KLITGAARD,* SAMUEL B. BARKER AND THEODORE WINNICK.* *Dept. of Physiology and Radiation Research Lab., State Univ. of Iowa, Iowa City.*

126. Iodide metabolism in rats on low iodide intake. LESTER VAN MIDDLESWORTH. *Div. of Physiology, Univ. of Tennessee, Memphis.*

127. Distribution of fixed carbon. ROBERT W. SWICK, DONALD L. BUCHANAN AND AKIRA NAKAO (introduced by THEODORE N. TAHMISIAN). *Div. of Biological and Med. Research, Argonne Natl. Lab., Chicago, Ill.*

128. Effect of whole body roentgen radiation on phagocytic function in rabbits. G. V. TAPLIN, J. S. GREVIOR, C. FINNEGAN, M. L. LANIER AND A. DUNN, (introduced by THOMAS J. HALEY). *Univ. of California School of Medicine, Los Angeles.* (Pharmacol.)

129. Bleeding time and clot resistance studies in mice, rats and rabbits, following whole body x-irradiation. ALFRED L. COPLEY. *New York Med. College, New York City, and Marine Biological Lab., Woods Hole, Mass.*

130. Studies of F_1 generation hybrid mice from an irradiated parent. JOHN H. RUST, ANN M. BUDY AND ROBERT D. BOCHE (introduced by FRANKLIN C. MCLEAN). *UT-AEC Agricultural Research Program, Oak Ridge, Tenn., and Univ. of Chicago USAF Radiation Lab., Chicago, Ill.*

131. Effect of roentgen irradiation upon growth and peripheral blood cell levels of the albino

rat. THOMAS R. NOONAN AND ANN M. NOONAN* (introduced by JOE W. HOWLAND). *Dept. of Radiation Biology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

132. Effect of sublethal total body x-radiation on susceptibility to certain microbial agents. I. L. SHECHMEISTER, L. J. PAULISSEN AND M. FISHMAN (introduced by E. W. DEMPSEY). *Dept. of Bacteriology and Immunology, Washington Univ. School of Medicine, St. Louis, Mo.*

133. Effects of x-irradiation on *Citellus tridecemlineatus*. JOHN DOULL,* DONALD F. PETERSEN* AND KENNETH P. DUBOIS. *U. S. Air Force Radiation Lab. and Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

134. Electrolytes in muscle of rat forelimb after intense local x-irradiation. W. S. WILDE AND C. W. SHEPPARD. *Dept. of Physiology, Tulane Univ., New Orleans, La., and Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

135. Weight and water consumption of x-irradiated rats. E. SUTTON* AND L. F. NIMS. *Biology Dept., Brookhaven Natl. Lab., Upton, L. I., N. Y.*

Symposium: Radiation Protection

TUESDAY, 1:15 P.M.—STATLER, PENN TOP NORTH-CENTER

Chairman: Alexander Hollaender

136. Mechanisms of protection against mammalian radiation injury. AUSTIN M. BRUES AND HARVEY M. PATT. *Argonne Natl. Lab., Chicago, Ill.*

137. Relation of fat metabolism to radiation damage and protection. HARDIN B. JONES, JOHN W. GOFMAN, THOMAS HAYES AND JOHN HEWITT. *Univ. of California, Berkeley.*

138. Treatment of radiation damage in mammals after exposure. LEON O. JACOBSON. *Dept. of Medicine, Univ. of Chicago, Chicago, Ill.*

139. Fundamental aspects of radiation protection from microbiological point of view. ALEXANDER HOLLAENDER AND GEORGE STAPLETON. *Biology Div., Oak Ridge Natl. Lab., Oak Ridge Tenn.*

Physiology Society Business Meeting

TUESDAY, 4:00 P.M.—STATLER, GEORGIAN ROOM

Joint Session of the Federation

TUESDAY, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Program on page 492

Wednesday Morning, April 16, 9:00 a. m.

Blood Substitutes—and Toxic Material

WEDNESDAY, 9:00 A.M.—MCALPIN, CRYSTAL ROOM

Chairman: Walter S. Root

140. Effect of dextran on renal function in dogs subjected to hemorrhagic hypotension. HERMAN F. FROEB,* RUBIN J. JUSTER,* CONRAD L. PIRANI,* C. F. CONSOLAZIO* AND RAYMOND C. INGRAHAM. *U. S. Army Med. Nutrition Lab. and Dept. of Physiology, Univ. of Illinois College of Medicine, Chicago.*

141. Plasma and dextran infusions following hemorrhage in dogs. KARLMAN WASSERMAN AND H. S. MAYERSON. *Dept. of Physiology, Tulane Univ. School of Medicine, New Orleans, La.*

142. Infusion of dextran solution into normal dogs. ROBERT E. SEMPLE (introduced by CHARLES H. BEST). *Banting and Best Dept. of Med. Research, Univ. of Toronto, Toronto, Ontario, Canada.*

143. Fluid balance and electrolyte dialysis in relation to plasma substitutes. STELIOS C. SAMARAS AND NICHOLAS DIETZ, JR. (introduced by FRANKLIN C. MCLEAN). *Dept. of Biochemistry, Creighton Univ. Med. School, Omaha, Nebr.*

144. Dextran, modified fluid gelatin and other plasma volume expanders in hemorrhaged dogs. W. M. PARKINS, J. H. PERLMUTT* AND H. M. VARS. *Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

145. Effect of oxypolygelatin, plasma and 0.9% sodium chloride solution on plasma volume of human subjects after hemorrhage. JOHN D. ELDER, JR., HAROLD G. BARKER AND JAMES M. WALKER (introduced by ROBERT D. DRIPPS). *Harrison Dept. of Surgical Research and Dept. of Anesthesiology, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

146. Colloidal salts as plasma substitutes. VIVIAN G. BEHRMANN AND FRANK W. HARTMAN.* *Labs., Henry Ford Hosp., Detroit, Mich.*

147. Mechanisms responsible for the acute toxicity of a phosphate glass. C. S. TIDBALL, R. E. GOSSELIN AND R. M. RENE (introduced by E. MAYNARD). *Dept. of Radiation Biology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

148. Effect of propylene glycol on the intravenous toxicity of dissolved compounds. RICHARD G. HORTON AND LILLIAN W. CONN.* *Chemical Corps Med. Labs., Army Chemical Center, Md.*

Pulmonary Circulation and Heart, Pathological Physiology

WEDNESDAY, 9:00 A.M.—MCALPIN, ROOF GARDEN

Chairman: René Wégria

149. Effects of graded hypoxemia on the pulmonary circulation of the dog. I. Severe hypoxemia. RICHARD GORLIN AND BENJAMIN M. LEWIS (introduced by WALTER T. GOODALE). *Med. Dept., Peter Bent Brigham Hosp. and Harvard Med. School, Boston, Mass.*

150. Effects of graded hypoxemia on the pulmonary circulation of the dog. II. Moderate hypoxemia. BENJAMIN M. LEWIS AND RICHARD GORLIN (introduced by GEORGE W. THORN). *Med. Dept., Peter Bent Brigham Hosp. and Harvard Med. School, Boston, Mass.*

151. Estimated changes in pulmonary blood volume accompanying systemic vasoconstriction and vasodilation using a gravimetric method for continuously recording the changes. STANLEY J. SARNOFF AND ERIK BERGLUND. *Dept. of Physiology, Harvard School of Public Health, Boston, Mass.*

152. Pressure volume relationship and stress relaxation in the pulmonary vascular bed of the dog. ERIK BERGLUND AND STANLEY J. SARNOFF (introduced by JAN NYBOER). *Dept. of Physiology, Harvard School of Public Health, Boston, Mass.*

153. Effect of unilateral nitrogen breathing on pulmonary blood flow in dogs. RICHARD M. PETERS* AND ALBERT ROOS. *Lab. of Thoracic Physiology, Depts. of Surgery and Physiology, Washington Univ. School of Medicine, St. Louis, Mo.*

154. Contribution of vascular 'hysteresis' to blood pooling. ROBERT S. ALEXANDER. *Dept. of Physiology, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

155. Certain physiologic factors involved in the production of right ventricular hypertrophy. HECTOR E. J. HOUSSAY* AND LEWIS DEXTER. *Med. Dept., Peter Bent Brigham Hosp. and Harvard Med. School, Boston, Mass.*

156. Pressure velocity relationships in the production of murmurs. SIMON RODBARD. *Cardiovascular Dept., Med. Research Inst., Michael Reese Hosp., Chicago, Ill.*

157. Suppressor effects of magnesium salts upon ectopic ventricular tachycardia accompany-

ing myocardial infarction. A. SIDNEY HARRIS, ANTONIO ESTANDIA,* HERBERT T. SMITH,* ROY W. OLSON* AND REX F. TILLOTTSON.* *Baylor Univ. College of Medicine, Houston, Tex.*

158. Dye dilution curves associated with mitral valvular disease. ROBERT G. TOMPKINS, HOWARD B. BURCHELL AND EARL H. WOOD. *Mayo Fndn., Univ. of Minnesota, and Mayo Clinic, Rochester.*

159. Functional studies in dogs with prosthetic mitral valves. GORDON W. SEARLE,* SHIRLEY J. HODGINS,* SEYMOUR A. HORWITZ* AND HAROLD C. WIGGERS. *Dept. of Physiology and Pharmacology, Albany Med. College, Union Univ., Albany, N. Y.*

160. Aorta to coronary sinus anastomosis of Beck. RICHARD W. ECKSTEIN, CARL HORNBERGER,* GEORGE SMITH* AND DAVID LEIGHNINGER.* *Dept. of Medicine, Western Reserve Univ., Cleveland, Ohio.*

Neurophysiology: Spinal Cord, Nerve Muscle, etc.

WEDNESDAY, 9:00 A.M.—MCALPIN, GRAND BALLROOM

Chairman: J. M. Tobias

161. An automatic reaction time and performance indicator. WILLIAM S. FREDERIK (introduced by BENJAMIN G. FERRIS, JR.) *Department of Physiology, Harvard School of Public Health, Boston, Mass.*

162. An apparent instability of conditioned and unconditioned hind leg flexion in certain conditioning situations. J. D. EMERSON (introduced by JOHN S. GRAY). *Dept. of Physiology, Northwestern Univ. Med. School, Chicago, Ill.*

163. Myofascial component of intermittent claudication. JANET TRAVELL, SEWARD J. BAKER, BARBARA B. HIRSCH AND SEYMOUR H. RINZLER (introduced by F. GUDERNATSCH). *Dept. of Pharmacology, Cornell Univ. Med. College, New York City.*

164. Reflex latency changes associated with temporal summation. L. D. PARTRIDGE (introduced by C. R. BRASSFIELD). *Physiology Lab., Univ. of Michigan, Ann Arbor.*

165. Intercostal nerve electrical activity. A. S. DONTAS* AND ROBERT GESELL. *Physiology Lab., Univ. of Michigan, Ann Arbor.*

166. Localization of the stretch reflex: LEONARD A. COHEN (introduced by JOHN F. FULTON). *Lab. of Physiology, Yale Univ. School of Medicine, New Haven, Conn.*

167. A comparison of spinal shock in normal dogs and in dogs made spastic by ischemia of the lumbar spinal cord. JOHN P. HILL* AND A. J. KOSMAN. *Depts. of Anatomy and Physiology, Northwestern Univ. Med. School, Chicago, Ill.*

168. Co-contraction and reciprocal innervation in normal voluntary human movement. The utilization of reciprocal innervation in the therapy of spasticity in neuromuscular disease. MILTON GJELHAUG LEVINE AND HERMAN KABAT. *Kabat-Kaiser Inst., Vallejo, Calif.*

169. Facilitation at neuromuscular junctions by stretch of muscle. B. LIBET AND E. W. WRIGHT.* *Univ. of California Med. School and College of Dentistry, San Francisco.*

170. Total tension and actively developed muscle twitch tension. GORDON M. SCHOEPFLE, A. S. GILSON, JR. AND WILLIAM W. SLEATOR, JR.* *Dept. of Physiology, Washington Univ. School of Medicine, Saint Louis, Mo.*

171. Incomplete neuromuscular transmission in the twitch system of the frog's skeletal muscles. STEPHEN W. KUFFLER. *Johns Hopkins Univ. and Marine Biological Lab., Woods Hole, Mass.*

172. Vascular and respiratory factors in the circulation of cerebrospinal fluid in man. ELI S. GOLDENSOHN AND ROBERT F. GROVER (introduced by R. W. WHITEHEAD). *Dept. of Physiology and Pharmacology, Univ. of Colorado School of Medicine, Denver.*

Endocrine: Gonads, Steroids, Pituitary II

WEDNESDAY, 9:00 A.M.—MCALPIN, RED ROOM

Chairman: P. P. Foa

173. Progesterone initially facilitates and later inhibits release of pituitary ovulating hormone in the rabbit. CHARLES H. SAWYER. *Depts. of Anatomy, Duke Univ., Durham, N. C., Univ. of California, Los Angeles, and Dept. of Investigative Medicine, Long Beach Veterans Administration Hosp., Long Beach, Calif.*

174. Observation of ovulation in the human via culdoscopy. H. S. FUTERMAN AND M. R. COHEN.* *Depts. of Metabolic and Endocrine Research, and Obstetrics and Gynecology, Michael Reese Hosp., Chicago, Ill.*

175. Nucleic acid content of rat testes at various ages. WILLIAM B. MCENERY* AND WARREN O. NELSON. *College of Medicine, Univ. of Iowa, Iowa City.*

176. Effect of dietary deficiencies on the prostatic response of the albino rat to testosterone propionate. JOHN W. KEARNS,* JOHN T. GRAYHACK* AND W. W. SCOTT. *James Buchanan Brady Urological Inst., Johns Hopkins Hosp., Baltimore, Md.*

177. Effects of testosterone propionate on rat

seminal vesicles. R. M. MELAMPY AND J. C. PORTER (introduced by E. A. HEWITT). *Iowa Agricultural Experiment Station, Iowa State College, Ames.*

178. Metabolic characteristics of the guinea pig seminal vesicle. H. A. LEVEY* AND C. M. SZEGO. *Dept. of Zoology, Univ. of California, Los Angeles.*

179. Inactivation of pregnant mare's serum gonadotrophin by various species of lithospermem. R. C. GRAHAM* AND R. L. NOBLE. *Collip Med. Research Lab., Univ. of Western Ontario, London, Canada.*

180. Effects of relaxin upon decidual reactions in the rat. EDWARD H. FRIEDEN AND JOSEPH T. VELARDO (introduced by F. L. HISAW). *Biological Labs., Harvard Univ., Cambridge, Mass.*

181. Electrometric assay of relaxin. H. R. CATCHPOLE, N. R. JOSEPH AND M. B. ENGEL.* *Dept. of Pathology, College of Medicine; Dept. of Chemistry, College of Pharmacy; and Dept. of Dental Therapeutics, College of Dentistry, Univ. of Illinois, Chicago.*

182. Hypothalamic involvement in stress-induced eosinopenia. R. W. PORTER (introduced by H. W. MAGOUN). *Dept. of Anatomy, Univ. of California School of Medicine, Los Angeles, and Long Beach Veterans Admin. Hosp., Long Beach, Calif.*

Kidney: Glomerular and Tubular Function II

WEDNESDAY, 9:00 A.M.—McALPIN, GREEN ROOM

Chairman: K. G. Wakim

183. Technique of validating renal function studies when renal extractions are determined. R. A. PHILLIPS. *U. S. Naval Med. Research Unit No. 3, Cairo, Egypt.*

184. Electrophoretic study of urinary protein in the rat. A. SELLERS,* S. ROBERTS, I. RASK,* S. SMITH, III,* J. MARMORSTON AND H. GOODMAN.* Inst. for Med. Research, Cedars of Lebanon Hosp., *Dept. of Medicine, Univ. of Southern California School of Medicine, and Dept. of Physiological Chemistry, Univ. of California School of Medicine, Los Angeles.*

185. Effect of lithium on acidification of the urine. JACK ORLOFF AND THOMAS J. KENNEDY, JR. (introduced by HEINZ SPECHT). *Natl. Insts. of Health, Bethesda, Md.*

186. Time relationships of certain renal processes. FRANCIS P. CHINARD. *Depts. of Physiological Chemistry and Medicine, Johns Hopkins School of Medicine, Baltimore, Md.* (Biochem.)

187. A method for the separate collection of urine from kidneys of the trained dog. MERRILL P. SPENCER (introduced by J. MAXWELL LITTLE). *Dept. of Physiology and Pharmacology, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.*

188. Effects of denervation on renal function in the dog. O. W. SARTORIUS AND H. BURLINGTON.* *Dept. of Physiology, State Univ. of New York Med. Center, Syracuse.*

189. Some effects of plasma volume expanders on renal function. LAWRENCE G. RAISZ (introduced by H. W. SMITH). *Surgical Research Unit, Brooke Army Hosp., Fort Sam Houston, Tex.*

190. Effect of mercurial diuretics on excretion of water. R. F. PITTS, D. R. AXELROD, W. S. WIGGINS AND J. N. CAPPS. *Dept. of Physiology, Cornell Univ. Med. College, New York City.*

191. Urine flow and solute excretion during osmotic diuresis. DAVID D. THOMPSON AND MARTHA J. BARRETT (introduced by DAYTON J. EDWARDS). *Dept. of Physiology, Cornell Univ. Med. College, New York City.*

192. Effect of mercurial diuretics during Pitressin antidiureses in man. R. E. WESTON, J. GROSSMAN,* E. R. BORUN* AND L. LEITER.* *Med. Div., Montefiore Hosp., New York City.*

193. Some effects of CCK 179 and pentobarbital anesthesia on renal function in dogs. WILLIAM D. BLAKE. *Lab. of Physiology, Yale Univ. School of Medicine, New Haven, Conn.*

Radiation Biology III

WEDNESDAY, 9:00 A.M.—McALPIN, COLONIAL ROOM

Chairman: A. M. Brues

194. Radiosensitivity of *C. paramecium* as influenced by phase of nitrogen assimilation. HOWARD S. DUCOFF (introduced by D. E. SMITH). *Div. of Biological and Med. Research, Argonne Natl. Lab., Chicago, Ill.*

195. Intrinsic factors affecting radiation mortality in the mouse. SIDNEY H. INGBAR AND NORBERT FREINKEL (introduced by CHARLES F. MORGAN). *Army Med. Service Graduate School, Walter Reed Army Med. Center, Washington, D. C.*

196. Fundamental relationship between tissue oxygen tension and radiosensitivity. B. VINCENT HALL (introduced by ROBERT E. JOHNSON). *Biomed. Div., Argonne Natl. Lab., Chicago, and Dept. of Zoology, Univ. of Illinois, Urbana.*

197. Physiological significance of cellular radiosensitivity. ANNA GOLDFEDER. *Cancer Research Lab., Dept. of Hosps., and New York Univ., New York City.*

198. Administration of pharmacological agents

as a protective measure against the lethal effects of x-irradiation in mice. PAUL R. SALERNO,* PAUL A. MATTIS AND H. L. FRIEDELL.* *Atomic Energy Med. Research Project, Western Reserve Univ., Cleveland, Ohio.* (Pharmacol.)

199. Ineffectiveness of flavonoid compounds in reducing radiation mortality. THOMAS J. HALEY AND SAMUEL MANN.* *Atomic Energy Project, School of Medicine, Univ. of California, Los Angeles.* (Pharmacol.)

200. Protective effect of spleen homogenates administered to mice after x-irradiation. LEONARD J. COLE, MARIE E. ELLIS, MAURICE C. FISHLER AND VICTOR P. BOND (introduced by GEORGE A. FEIGEN). *Biological and Med. Sciences Div., U. S. Naval Radiological Defense Lab., San Francisco, Calif.*

201. Protection of mice against irradiation by dog plasma and spleen perfusates. AGNES N. STROUD* AND AUSTIN M. BRUES. *Div. of Biological and Med. Research, Argonne Natl. Lab., Chicago, Ill.*

202. Pretreatment with cysteine in partial body x-irradiation. MARGUERITE N. SWIFT, S. TOM TAKETA AND VICTOR P. BOND (introduced by J. S. THATCHER). *U. S. Naval Radiological Defense Lab., San Francisco, Calif.*

203. Mechanisms of radiation protection of thymic cell suspensions. HARVEY M. PATT AND MARGARET E. BLACKFORD.* *Argonne Natl. Lab., Chicago, Ill.*

Wednesday Afternoon, April 16

Electrolyte and Active Transport

WEDNESDAY, 1:15 P.M.—MCALPIN, CRYSTAL ROOM

Chairman: B. W. Zweifach

204. Oxygen capacity, volume and water content of erythrocytes from spleen of the dog. KENNETH E. PENROD. *Dept. of Physiology and Pharmacology, Duke Univ., School of Medicine, Durham, N. C.*

205. Mechanism of glucose transfer across the human red cell surface. PAUL G. LEFEVRE AND MARIAN E. LEFEVRE.* *Univ. of Vermont College of Medicine, Burlington.*

206. Energy relations in human red cell cation transport. A. K. SOLOMON (introduced by A. BAIRD HASTINGS). *Biophysical Lab., Harvard Med. School, Boston, Mass.*

207. Red cell potassium exchange in sickel cell anemia. D. C. TOSTESON (introduced by R. C. DARLING). *Dept. of Medicine, Columbia Univ. College of Physicians & Surgeons, New York City, and Med. Dept., Brookhaven Natl. Lab., Upton, L.I., N.Y.*

208. Effect of experimental venous obstruction on water and electrolyte distribution in man. MARVIN F. LEVITT, LOUIS B. TURNER AND AVRON Y. SWEET (introduced by CHESTER W. HAMPEL). *Depts. of Medicine and Pediatrics, the Mount Sinai Hosp., New York City.*

209. Effect of carbonic anhydrase inhibitor 6063 (2-acetylamino-1,3,4-thiadiazole-5-sulfonamide) on renal excretion of fluid and electrolytes in patients with congestive heart failure. CHARLES K. FRIEDBERG AND MARK HALPERN (introduced by MILTON MENDLOWITZ). *Mount Sinai Hosp., New York City.*

210. Water and calcium shifts induced in guinea pigs by a lethal dose of histamine. LESTER F. WOLTERINK, MARVIN MURRAY* AND W. DOYNE COLLINGS. *Dept. of Physiology and Pharmacology, Michigan State College, East Lansing.*

211. Significance of the anion in active salt uptake by isolated frog skin. ERNEST G. HUF, JOYCE WILLS* AND MARY JANE COOLEY*. *Med. College of Virginia, Richmond.*

212. Absorption of water, urea, glucose and electrolytes through the human bladder. N. S. R. MALUF. *Squier Urological Clinic, Columbia-Presbyterian Hosp., New York City.*

213. Potassium exchange in rat tissues. J. GINSBURG (introduced by RICHARD ASHMAN). *Dept. of Physiology, Tulane Univ., New Orleans, La., and Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

Blood Pressure: Flow, Curves, etc.

WEDNESDAY, 1:15 P.M.—MCALPIN, ROOF GARDEN

Chairman: A. B. Hertzman

214. A caloric technique for measuring blood flow in the feline bladder. CARL M. BARLOW* AND WALTER S. ROOT. *Dept. of Physiology, Columbia Univ., College of Physicians and Surgeons, New York City.*

215. Mechanism of vasodilatation in the hind limb of dogs. M. J. FRUMIN, S. H. NGAI AND S. C. WANG (introduced by WILLIAM L. NASTUK). *Depts. of Anesthesiology and Physiology, Columbia Univ. College of Physicians and Surgeons, New York City.*

216. Influence of pH upon the blood flow and peripheral resistance in the hind leg of the dog. NANCY C. KESTER,* ALFRED W. RICHARDSON* AND HAROLD D. GREEN. *Dept. of Physiology and Pharmacology, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.*

217. Vasomotor waves due to oscillating blood pressure control mechanisms. ARTHUR C. GUYTON. *Dept. of Physiology and Biophysics, Univ. of Mississippi School of Medicine, University.*

218. A general theory of the shape of pressure-flow curves in vascular beds. ALAN C. BURTON, F. GIRLING* AND W. JERRARD.* *Dept. of Biophysics Univ. of Western Ontario Med. School, Ontario, Canada.*

219. Effect of arteriovenous fistula on the circulation. RENÉ WÉGRIA, CHARLES W. FRANK,* HSEUH H. WANG* AND ROBERT MILLER. *Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, and Presbyterian Hosp., New York City.*

220. Effect of respiration on venous return to the heart. GERHARD A. BRECHER AND GEORGE MIXTER, JR.* *Dept. of Physiology, Western Reserve Univ. Med. School, Cleveland, Ohio.*

221. Size of retinal arterioles as related to age and blood pressure. AUSTIN HENSCHEL AND ANCEL KEYS. *Lab. of Physiological Hygiene, Univ. of Minnesota, Minneapolis.*

222. Venous pressure during exercise in man: relation to blood volume, cardiac competence, and pulmonary pressure. E. BROWN, J. HOPPER, JR., AND J. D. LANGE (introduced by J. J. SAMPSON). *Div. of Medicine, Univ. of California School of Medicine, Berkeley.*

223. Emotional blood pressure responses of trained normal dogs. C. M. WILHELMJ, E. B. WALDMANN,* T. F. McGUIRE,* AND JOHN McDONOUGH.* *Dept. of Physiology and Pharmacology, Creighton Univ. School of Medicine, Omaha, Nebr*

224. Cardiovascular changes accompanying increasing blood levels of potassium. EDWIN L. SMITH, RUSSELL A. HUGGINS, RUTH SAXTON* AND DORIS GIESLER.* *Dept. of Physiology, Univ. of Texas, Dept. of Pharmacology, Baylor Univ. College of Medicine, Houston.*

Neurophysiology: Spinal Cord, Reflexes, etc.

WEDNESDAY, 1:15 P.M.—McALPIN, GRAND BALLROOM

Chairman: S. S. Kety

225. Further analysis of mechanism of spinal cord regeneration in the cat. DONALD SCOTT, JR. AND C. D. CLEMENTS.* *Dept. of Anatomy, Univ. of Pennsylvania, Philadelphia.*

226. Role of the cerebellum in regulation of decerebrate spasticity in the cat. WILLIAM W. CHAMBERS AND JAMES M. SPRAGUE.* *Dept. of Anatomy, Univ. of Pennsylvania, Philadelphia.*

227. Role of the spinal cord in regulation of decerebrate spasticity in the cat. JAMES M. SPRAGUE (introduced by L. B. FLEXNER). *Dept. of Anatomy, Univ. of Pennsylvania, Philadelphia.*

228. Localized lesions in the bulboreticular inhibitory formation produced by ultrasound. W. H. MOSBERG, JR., D. TUCKER AND W. J. FRY (introduced by W. S. McCULLOCH). *Manteno State Hosp., Manteno, Ill., Dept. of Electrical Engineering, Univ. of Illinois, Urbana.*

229. Sources and sinks of current in the spinal cord. W. PITTS, P. WALL AND J. LETTVIN. (introduced by MARY A. B. BRAZIER). *Massachusetts Inst. of Technology, Boston, Mass., and Dept. of Anatomy, U. of Chicago, Chicago, Ill.*

230. Properties of spinal cord elements studied with intracellular ultramicroelectrodes. J. WALTER WOODBURY AND HARRY D. PATTON. *Dept. of Physiology and Biophysics, Univ. of Washington School of Medicine, Seattle.*

231. Effect of cord transection and dorsal root interruption on oscillating potentials of cat's spinal cord. EDGAR L. GASTEIGER AND VERNON H. MARK (introduced by PAUL O. CHATFIELD). *Dept. of Neurosurgery, Massachusetts General Hospital, and the Dept. of Physiology, Harvard Med. School, Boston.*

232. Responses in corticospinal tract of cat and monkey. HARRY D. PATTON AND VAHE E. AMASSIAN.* *Dept. of Physiology and Biophysics, Univ. of Washington School of Medicine, Seattle.*

233. Mechanism normally suppressing mono-synaptic reflex discharge of spinal motoneurones in man. ROBERT D. TEASDALL,* HELEN W. LANGUTH* AND J. W. MAGLADERY. *Subdept. of Neurological Medicine, Johns Hopkins and Baltimore City Hosps., Baltimore, Md.*

234. Increase of reflex time during growth. I. H. WAGMAN. *Dept. of Physiology, Jefferson Med. College, Philadelphia, Pa.*

Endocrine: Thyroid, Parathyroid, Thiouracil, etc.

WEDNESDAY, 1:15 P.M.—McALPIN, RED ROOM

Chairman: C. H. Best

235. A proposed method for assay of thyroid preparations. ELIZABETH A. HERROLD, ROY K. RINEHART, HAROLD E. COOMBS (introduced by JAMES H. LEATHEM). *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

236. Calorigenic activities of thyroxine and thyroglobulin. ROBERT L. KROC AND NEIL R. STASILLI (introduced by A. A. HELLBAUM).

Research Dept., Chilcott Labs., Morris Plains, N. J.

237. Effect of thyroxin pretreatment on decarboxylation of dihydroxyphenylalanine (Dopa) and the production of sustained hypertension. A. E. SAMIY (introduced by WILLIAM G. CLARK). *Depts. of Zoology and Physiological Chemistry, Univ. of California, Los Angeles.*

238. Thyroxin binding by bovine serum albumin. ALLEN LEIN. *Dept. of Physiology, Northwestern Univ. Med. School, Chicago, Ill.*

239. Evidence that TSH in dogs produces an early increase of thyroid iodine from plasma forms other than inorganic iodide. JOHN C. VANATTA AND ALLEN F. REID (introduced by ROBERT W. LACKEY). *Depts. of Physiology and Biophysics, Southwestern Med. School, Univ. of Texas, Dallas.*

240. Effect of cortisone on the tissue protein-bound iodine and the iodine content of the thyroid gland. WILLIAM C. FOSTER (introduced by J. F. MCCLENDON). *Dept. of Physiology, Hahnemann Med. College, Philadelphia, Pa.*

241. Changes in plasma P.B.I. in response to stressful life experiences. B. S. HETZEL, D. S. DE LA HABA AND L. E. HINKLE, JR. (introduced by H. G. WOLFF). *Depts. of Medicine and Psychiatry, New York Hosp.-Cornell Med. Center, New York City.*

242. Thyroxine-like compounds in iodinated protein and thyroid gland. W. FRIEDBERG AND E. P. REINEKE. *Dept. of Physiology and Pharmacology, Michigan State College, East Lansing.*

243. Pituitary-thyroid-adrenal function in the goitrous guinea pig. SAVINO A. D'ANGELO. *Dept. of Anatomy, Jefferson Med. College, Philadelphia, Pa.*

244. Effect of 'thyroidectomy' on nephrectomized dogs and rats. ROBERT T. MARSHALL* AND SMITH FREEMAN. *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

245. Alcoholic drive in rats treated with thiouracil. B. ROSEMBERG* AND M. X. ZARROW. *Dept. of Biological Sciences, Purdue Univ., Lafayette, Ind.*

Comparative Physiology

WEDNESDAY, 1:15 P.M.—MCALPIN, GREEN ROOM

Chairman: O. E. Reynolds

246. Upper lethal temperatures of some British Columbia fresh-water fishes. EDGAR C. BLACK. *Dept. of Physiology, Univ. of British Columbia, and the British Columbia Game Dept., Vancouver.*

247. Temperature effects on tissue chemistry of the Arctic sculpin. XAVIER J. MUSACCHIA,* MARGUERITE CLARK* AND CHARLES G. WILBER. *Biological Labs., St. Louis Univ., St. Louis, Mo.*

248. Phylogenetic and functional evolution of human teeth. T. L. PATTERSON. *Dept. of Physiology, Wayne Univ. College of Medicine Detroit, Mich.*

249. Oxygen dissociation of mammalian blood in relation to body size. KNUT SCHMIDT-NIELSEN AND BJÖRN GJÖNNES.* *Kettering Lab., Univ. of Cincinnati, Cincinnati, Ohio, and Dept. of Chemistry, Univ. of Oslo, Norway.*

250. Cholesterol in the Syrian golden hamster. M. C. MIROFF (introduced by P. W. WRIGHT). *Dept. of Zoology, Univ. of Michigan, Ann Arbor.*

251. Tension-length curves of insect fibrillar muscle. WILLIAM MCENROE (introduced by ROBERT H. OSTER). *Dept. of Zoology, Univ. of Connecticut, Storrs.*

252. Relation between oxygen consumption and wing load in flies. FRANCES V. MCCANN* AND EDWARD G. BOETTIGER. *Dept. of Zoology, Univ. of Connecticut, Storrs.*

253. Effect of acetylcholine on a stretch receptor of Crayfish. C. A. G. WIERSMA, E. FLOREY* AND E. FURSHPAN.* *Kerckhoff Labs. of Biology, California Inst. of Technology, Pasadena.*

254. Blood proteins of *Cryptochiton stelleri*. DORIS STEWART,* WALTER DANDKLIKER* AND ARTHUR W. MARTIN. *Depts. of Zoology and Biochemistry, Univ. of Washington, Seattle.*

255. Mechanisms in the bat larynx for production of ultrasonic sounds. DONALD R. GRIFFIN. *Dept. of Zoology, Cornell Univ., Ithaca, N. Y.*

256. Activity of electroplax of electric eel. MARIO ALTAMIRANO-ORREGO,* CHRISTOPHER W. COATES,* HARRY GRUNDFEST, DAVID NACHMANSOHN AND IRWIN B. WILSON.* *Dept. of Neurology, Columbia Univ. College of Physicians and Surgeons, and the New York Zoological Soc., New York City.*

Radiation Biology IV: Biophysics and Body Fluids

WEDNESDAY, 1:15 P.M.—MCALPIN, COLONIAL ROOM

Chairman: Hardin Jones

257. Thermal radiation burns in rabbits. DAVID MINARD AND RODERICK E. JENSEN.* *Naval Med. Research Inst.*, Bethesda, Md.

258. Protection of α-Chymotrypsin against gamma radiation. DAVID G. DOHERTY, (introduced by ALEXANDER HOLLAENDER). *Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

259. Degradation of desoxypentose nucleic acid by ultraviolet irradiation. MARIA SERAYDARIAN,* ATTILIO CANZANELLI AND DAVID

RAPPORT. *Research Lab., Boston Dispensary, and Dept. of Physiology, Tufts College Med. School, Boston, Mass.*

260. Effect of nitrogen mustard on water metabolism in the rat. ABRAHAM EDELMANN, RUTH B. HEALEY* AND GLADYS M. MATEYKO.* *Biology Dept., Brookhaven Natl. Lab., Upton, L. I., N. Y.*

261. Adaption of radiothermic wave band. FREDERICK M. ALLEN. *City Hosp., Welfare Island, N. Y.*

262. Radiation area of the human body. CRAIG L. TAYLOR AND ARMAND GUIBERT.* *Dept. of Engineering, Univ. of California, Los Angeles.*

263. Bioelectrical patterns in the synovialis of the dog. C. I. REED. *Dept. of Physiology Univ. of Illinois, Chicago Professional Colleges, Chicago, Ill.*

264. Electrical properties of blood at ultrahigh frequencies. HERMAN SCHWAN (introduced by J. E. ECKENHOFF). *Robinette Fndn., Med. Clinic, Hosp. of Univ. of Pennsylvania, and Dept. of Medicine, Univ. of Pennsylvania Med. School, Philadelphia.*

265. Thirst and excretion after salt administration. GERALD S. KANTER (introduced by E. F. ADOLPH). *Dept. of Physiology, Univ. of Rochester, Rochester, N. Y.*

266. Changes in extracellular space induced by intravenous saline solution in man. BETTY CRAWFORD* AND MARIO GAUDINO. *Depts. of Anesthesiology, Surgery and Physiology, New York Univ. College of Medicine, New York City.*

267. A method of measuring *l*-hydrazinophthalazine in body fluids. H. MITCHELL PERRY (introduced by HENRY A. SCHROEDER). *Dept. of Internal Medicine, Washington Univ. School of Medicine, St. Louis, Mo.*

268. Determination of body fat by cyclopropane absorption. GERSON LESSER,* ARNOLD BLUMBERG* AND J. MURRAY STEELE. *Third Med. Div., Goldwater Memorial Hosp. and New York Univ. College of Medicine, New York City.*

Symposium and Panel Discussion: Secretion of Electrolytes

WEDNESDAY, 1:15 P.M.—NEW YORKER, GRAND BALLROOM

Chairman: Franklin Hollander

269. Renal secretion of hydrogen and potassium ions. ROBERT W. BERLINER. *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

270. Renal excretion of water and sodium. HOMER W. SMITH. *New York Univ.-Bellevue Med. Center, New York City.*

271. Gastric secretion of electrolytes and water. FRANKLIN HOLLANDER. *Gastroenterology Research Lab., Mt. Sinai Hosp., New York City.*

272. Substrate and oxygen consumption during gastric secretion, HORACE W. DAVENPORT, *Univ. of Utah, Salt Lake City.*

273. Energy relations in pancreatic secretion of electrolytes. ALEXANDER K. SOLOMON. *Harvard Med. School, Boston, Mass.*

Panel Discussion: Interpretation and Significance of Alterations in Central Pulse Form

WEDNESDAY, 1:15 P.M.—NEW YORKER, PARLOR F-G

Chairman: D. F. Opdyke

Introduction: E. M. Landis

274. Pressure pulse in dog and man as influenced by physical characteristics of the arterial tree and by changes in cardiac and vasomotor activity. R. S. ALEXANDER, *Western Reserve Univ. School of Medicine, Cleveland, Ohio;* J. W. REMINGTON, *Med. College of Georgia, Augusta* AND L. H. PETERSON, *Univ. of Pennsylvania Med. School, Philadelphia.*

275. Pressure pulse as an index to stroke volume. R. A. HUGGINS, *Baylor Univ. College of Medicine, Houston, Tex.;* J. W. REMINGTON AND R. S. ALEXANDER.

Special Session: The Teaching of Physiology

WEDNESDAY, 8:00 P.M.—STATLER, PENN TOP NORTH-CENTER

Chairman: J. H. Comroe, Jr.

276. Are there principles of teaching physiology? EDWARD F. ADOLPH. *Univ. of Rochester School of Medicine, Rochester, N. Y.*

277. Human physiology for first year medical students: advantages and disadvantages. EUGENE M. LANDIS. *Harvard Med. School, Boston, Mass.*

278. Teaching clinical medicine from the physiological viewpoint. ISAAC STARR. *Hosp. of the Univ. of Pennsylvania, Philadelphia.*

279. The medical student's point of view: report of the Student Committee. GEORGE W. ALLEN, *Columbia Univ.;* EUGENE BRAUNWALD, *New York Univ.;* MARVIN L. DAVES, *Johns Hopkins Univ.;* BUEL S. SMITH, *Univ. of Pennsylvania* AND PETER STOKES, *Cornell Univ.*

280. Point of view of the practicing physician: report of survey. J. H. COMROE, JR. *Univ. of Pennsylvania Grad. School of Medicine, Philadelphia.*

281. Departures from tradition in medical student physiology laboratory work. H. M. HINES. *State Univ. of Iowa, Iowa City.*

282. Teaching the lessons of the exponential function without calculus. W. S. WILDE. *Tulane Univ. School of Medicine, New Orleans, La.*

Thursday Morning, April 17, 9:00 a. m.

General: Erythrocytes, Leucocytes and Anemias

THURSDAY, 9:00 A.M.—MCALPIN, CRYSTAL ROOM

Chairman: M. B. Visscher

283. Ultrastructure of the plasma membrane. JOSEPH F. HOFFMAN* and JAMES HILLIER. *Princeton Univ. and RCA Labs. Div., Princeton, N. J.*

284. Kinetics of phosphate transport in erythrocytes. D. R. H. GOURLEY AND J. T. MATSCHINER.* *Dept. of Pharmacology, Univ. of Virginia Med. School, Charlottesville.*

285. Acidity versus acetylcholine and cation permeability of red cells. ARTHUR K. PARPART AND JOSEPH F. HOFFMAN.* *Dept. of Biology, Princeton Univ., Princeton, N. J.*

286. Experimental modifications of the differential permeability of the erythrocyte to ions. M. H. JACOBS. *Dept. of Physiology, Univ. of Pennsylvania, Philadelphia.*

287. Absorption of dodecyl ammonium chloride by the human erythrocyte. WARNER E. LOVE (introduced by BRITTON CHANCE.) *Dept. of Physiology, Univ. of Pennsylvania School of Medicine, Philadelphia.*

288. A reversible biochemical lesion in stored erythrocytes. BEVERLY WESCOTT GABRIO* AND CLEMENT A. FINCH. *Dept. of Medicine, Univ. of Washington School of Medicine, Seattle.*

289. Enzyme assays in nucleated and nonnucleated erythrocytes. ALICE S. BAKER AND F. R. HUNTER (introduced by E. NEWTON HARVEY). *Dept. of Physiology, Florida State Univ., Tallahassee.*

290. Observations on the oxygen content of sternal bone marrow with reference to polycythemic states. HANS H. HECHT AND ARTHUR J. SAMUELS (introduced by VIRGINIA D. DAVENPORT). *Dept. of Medicine, Univ. of Utah College of Medicine, Salt Lake City.*

291. Potentiation of the hematopoietic effect of orally administered vitamin B_{12} by glandular mucoprotein of the human stomach. GEORGE B. JERZY GLASS, LINN J. BOYD AND CHESTER S. SVIGALS (introduced by STEWART WOLF). *Dept. of Medicine, New York Med. College, Flower and Fifth Ave. Hosp., New York City.*

292. Thrombocytopenic effect of normal plasma. MARIO STEFANINI AND JYOTI B. CHATTERJEA (introduced by JOSEPH H. PRATT). *Blood Research Lab., New England Center Hosp. and Dept. of Medicine, Tufts College Med. School, Boston, Mass.*

293. Comparison of DFP- and methylene blue-induced anemias. A. B. VIALPANDO,* H. C. STRUCK AND L. H. HOEBELHEINRICH.* *Dept. of Physiology and Pharmacology, Creighton Univ. School of Medicine, Omaha, Nebr.*

294. Measurement of the life span of white blood cells with radioactive phosphorus. DANIEL L. KLINE AND EUGENE E. CLIFFTON (introduced by GEORGE R. COWGILL). *Dept. of Physiological Chemistry and Section of Oncology, Dept. of Surgery, Yale Univ. School of Medicine, New Haven, Conn.*

Circulation: Cardiac Output I

THURSDAY, 9:00 A.M.—MCALPIN, ROOF GARDEN

Chairman: K. E. Jochim

295. Fluid and changes in A-V shunt. J. H. HOLMES AND A. V. MONTGOMERY.* *Depts. of Medicine and Physiology, Univ. of Colorado School of Medicine, Denver.*

296. Induction of experimental heart failure with arteriovenous fistulae. J. R. R. BOBB,* C. W. LILLEHEI* AND M. B. VISSCHER. *Depts. of Physiology and Surgery, Univ. of Minnesota Med. School, Minneapolis.*

297. Cardiac output (direct Fick) during graded exercise of normal dogs, dogs with decreased cardiac competence, and with congestive failure. A. C. BARGER, V. RICHARDS,* J. METCALFE* AND B. GUNTHER.* *Dept. of Physiology, Harvard Med. School, Boston, Mass.*

298. Evaluation of factors in the determination of cardiac output by dye dilution methods. J. ENGLEHARDT, A. E. LEWIS, R. D. GOODMAN AND E. A. SHUCK (introduced by V. E. HALL). *Pathology Section, Atomic Energy Project, Univ. of California School of Medicine, Los Angeles.*

299. Measurement of cardiac output by a new modification of the Fick principle without gas analysis. J. GROSSMAN, R. E. WESTON AND L. LEITER (introduced by H. HAIMOVICI). *Med. Div., Montefiore Hosp., New York City.*

300. Effect of acute occlusion of the aorta upon cardiac output and hemodynamics. STEVEN M. HORVATH AND ROBERT W. HARRISON.* *Dept. of Physiology, State Univ. of Iowa, Iowa City.*

301. Relation of aortic pulse pressure curves both to left ventricular stroke volume and to output at every instant of systole. ISAAC STARR, T. G. SCHNABEL, JR.,* R. L. MAYOCK* AND

J. H. AUSTIN. *Depts. of Therapeutic Research and Medicine, Univ. of Pennsylvania, Philadelphia.*

302. Effect of applied external pressure on cardiovascular dynamics. JOHN R. BEEM,* CARL R. HONIG* AND DEAN F. DAVIES. *Dept. of Internal Medicine, Washington Univ. School of Medicine, and Saint Louis City Hosp., Saint Louis, Mo.*

303. Measurement of limb blood flow in man by constant infusion of T-1824. K. L. ZIERLER, R. ANDRES,* H. M. ANDERSON,* W. STAINSBY* AND J. L. LILIENTHAL, JR. *Depts. of Environmental Medicine and Medicine, Johns Hopkins Univ., Baltimore, Md.*

304. Basal cardiac output and body composition in developing obesity in man. HENRY LONGSTREET TAYLOR, WALTER CARLSON,* JOSEF BROZEK AND ANCEL KEYS. *Lab. of Physiological Hygiene, Univ. of Minnesota, Minneapolis, and Mental Health Research Lab., Hastings, Minn.*

305. Left ventricular filling. ROBERT F. RUSHMER, DEAN CRYSTAL,* CLYDE WAGNER,* JOHN HENDRON* AND RICHARD ELLIS.* *Dept. of Physiology and Biophysics, Univ. of Washington School of Medicine, Seattle.*

Neurophysiology: Nerve, Ganglia, Cells

THURSDAY, 9:00 A.M.—McALPIN, GRAND BALLROOM

Chairman: D. W. Bronk

306. 'Seizures' in a peripheral nerve preparation with feedback. J. E. P. TOMAN AND M. E. TOMAN.* *Dept. of Pharmacology, Abbott Labs., North Chicago, and Psychosomatic Inst., Michael Reese Hosp., Chicago, Ill.*

307. Activity of single neurons of the somatic sensory nuclear complex of the thalamus. VERNON B. MOUNTCASTLE AND JERZY E. ROSE. *Johns Hopkins Univ. School of Medicine, Baltimore, Md.*

308. Functional and histological studies of sympathetic ganglia infected with pseudorabies virus. JOHN DEMPSHER, FREDERIC B. BANG AND DAVID BODIAN (introduced by DETLEV W. BRONK). *Jenkins Labs. of Biophysics and Depts. of Medicine and Epidemiology, Johns Hopkins Univ. and Hosp., Baltimore, Md.*

309. Consumption of glucose by sympathetic ganglia. CHARLES EDWARDS* AND MARTIN G. LARRABEE. *Jenkins Labs. of Biophysics, Johns Hopkins Univ. and Hosp., Baltimore, Md.*

310. Comparative metabolism of neural regions and cells. J. SNYDER,* L. G. ABOOD AND R. W. GERARD. *Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*

311. Effects of oxygen at high pressure on central nervous system axons. DONALD O. RUDIN AND GEORGE EISENMAN (introduced by HENRY K. BEECHER). *Anesthesia Lab. of Harvard Med. School at Massachusetts General Hosp., Boston, Mass.*

312. Nerve metabolism as studied with C-14 labeled compounds. L. J. MULLINS (introduced by W. R. AMBERSON). *Purdue Univ., Lafayette, Ind.*

313. Optical properties of active nerve. S. H. BRYANT* AND JULIAN M. TOBIAS. *Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*

314. Ultra-violet spectra and neurophysiological effects of 'veratrine' alkaloids. ABRAHAM M. SHANES. *Natl. Insts. of Health, Bethesda, Md.*

315. Interaction between certain nerve blocking drugs and sodium ions. FREDERICK CRESCITELLI. *Dept. of Zoology, Univ. of California, Los Angeles.*

Endocrine, ACTH, etc.

THURSDAY, 9:00 A.M.—McALPIN, RED ROOM

Chairman: G. W. Thorn

316. An evaluation of adrenal responses to ACTH and stress in the mouse. WOODROW B. KESSLER* AND JAMES H. LEATHEM. *Dept. of Physiology, Univ. of Texas Dental Branch, Houston, and Bureau of Biological Research, Rutgers Univ., New Brunswick, N. J.* (Pharmacol.)

317. Effect of ACTH and cortisone on antibody synthesis and rate of disappearance of antigen. SHELDON P. HAYES* AND THOMAS F. DOUGHERTY. *Dept. of Anatomy, Univ. of Utah College of Medicine, Salt Lake City.*

318. Effect of ACTH on renal function of hypophysectomized dogs. D. P. EARLE, S. J. FARBER,* R. C. DE BODO AND M. KURTZ.* *Depts. of Pharmacology and Medicine, New York Univ. College of Medicine, New York City.*

319. Effect of diet and ACTH on nucleic acid metabolism in the rat. JOHN A. D. COOPER (introduced by WILLIAM B. BRADLEY). *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

320. Effect of administration of ACTH on the ammonia content of the brain. CLARA TORDA AND HAROLD G. WOLFF. *Depts. of Medicine (Neurology) and Psychiatry, New York Hosp.-Cornell Med. Center, New York City.*

321. Effects of ascorbic acid and ACTH combined or separately, on the adrenal weight of normal and hypophysectomized rats. LOUIS-PAUL DUGAL AND MERCEDÈS THÉRIEN. *Institut de Physiologie, Université Laval, Québec, Canada.*

322. In vivo and in vitro effect of ascorbic acid

and ACTH on the rat adrenal cortex. A. DESMARAIS AND J. LEBLANC (introduced by EDOUARD PAGÉ). *Institut de Physiologie, Université Laval, Québec, and Defence Research Med. Lab., Toronto, Canada.*

323. Comparison of the insulin sensitivity of adrenalectomized and of hypophysectomized dogs. R. C. DE BODO, M. W. SINKOFF* AND S. P. KIANG.* *Dept. of Pharmacology, New York Univ. College of Medicine, New York City.*

324. Influence of cortisone and ACTH on capillary premeability in rats under subnutritional conditions. THEODORE BALOURDAS* AND ROBERT CHAMBERS. *Dept. of Biology, New York Univ., New York City.*

325. Chemical changes in the blood in children with lipoid nephrosis before, during and after treatment with ACTH (corticotropin). BENJAMIN KRAMER, DANIEL D. CASDEN,* HERBERT GOLDMAN* AND SAMUEL SILVERMAN.* *Pediatric Research Labs., Jewish Hosp. of Brooklyn, Brooklyn, N. Y.*

Elementary Processes of Muscle Action

THURSDAY, 9:00 A.M.—MCALPIN, GREEN ROOM

Chairman: M. F. Morales

326. Binding of ions to myosin. E. MIHALYI AND B. N. GHOSH (introduced by JAMES H. JONES). *Inst. for Muscle Research at Marine Biological Lab., Woods Hole, Mass.* (Biochem.)

327. Isolation and characterization of the fractions of trypsin digested myosin. ANDREW G. SZENT-GYORGYI (introduced by ALBERT SZENT-GYORGYI). *Inst. for Muscle Research, Woods Hole, Mass.* (Biochem.)

328. Kinetics of muscle adenosine triphosphatase. LUDOVIC OUELLET AND KEITH J. LAIDLER (introduced by E. HARDENBERGH). *Div. of Physical Biochemistry, Naval Med. Research Inst., Bethesda, Md.*

329. Light scattering studies on the myosin-adenosine triphosphate system. JACOB JOSEPH BLUM (introduced by T. BENZINGER). *Physical Biochemistry Div., Naval Med. Research Inst., Bethesda, Md.*

330. Fibers of surface-spread actomysoin as models of muscle contraction. TERU HAYASHI AND RAJA ROSENBLUETH. *Dept. of Zoology, Columbia Univ., New York City.*

331. Effect of digoxin upon the rate of shortening of myosin B threads. WILLIAM J. BOWEN. *Natl. Insts. of Health, Bethesda, Md.*

332. Statistical thermodynamics of free energy transfer in certain models of muscle action. TERRELL L. HILL* AND MANUEL F. MORALES. *Naval Med. Research Inst., Bethesda, Md.*

333. Infra-red spectra of muscle cells. D. L. WOOD AND G. B. B. M. SUTHERLAND (introduced by E. S. BROWN). *Dept. of Physics, Univ. of Michigan, Ann Arbor.*

334. Relation of pH to the shortening of muscle protoplasm by cations. FLOYD J. WIERCINSKI. *Dept. of Physiology, Hahnemann Med. College, Philadelphia, Pa.*

335. Contractile system of smooth muscles. WILLIAM H. JOHNSON* AND JOHN F. PERKINS, JR. *Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*

336. Concentration and potential pattern within the membrane and its relation to penetration of ions and to the time constants of electrotonus and accomodation. M. J. POLISSAR (introduced by F. H. JOHNSON). *Biomechanics Group, Univ. of California, San Francisco.*

Metabolism: Carbohydrate Balance etc.

THURSDAY, 9:00 A.M.—MCALPIN, COLONIAL ROOM

Chairman: F. C. Mann

337. Basal metabolic changes due to surgical removal of aortic paraganglia in the guinea pig. OZRO B. WISWELL (introduced by ERNEST BEERSTECHER). *Dept. of Anatomy, Univ. of Texas Dental Branch, Houston.* (Biochem.)

338. Synthesis of lipids from radioactive acetate by surviving adipose tissue slices. D. D. FELLER. *Dept. of Physiology, Tufts College Med. School, Boston, Mass.*

339. Effect of diet upon food and water intake during a survival period under temperate conditions. R. F. KLINE AND H. C. DYME.* *Aero Med. Lab., Wright Air Development Center, Wright-Patterson Air Force Base, Dayton, Ohio.*

340. Calcium balance in the aged male. MORTON D. BOGDONOFF,* MARY P. NICHOLS* AND NATHAN W. SHOCK. *Natl. Insts. of Health, Bethesda, and Section on Gerontology, Baltimore City Hosp., Baltimore, Md.*

341. Blood and urinary sugar levels after intravenous infusion of glucose, fructose and invert sugar in human subjects. IRWIN STRUB,* W. R. BEST,* EVELYN MAREK* AND M. I. GROSSMAN. *U. S. Army Med. Nutrition Lab., Chicago, Ill.*

342. Effect of altered breakfast habits on the physiologic responses of men past sixty years of age. W. W. TUTTLE, KATE DAUM AND BARBARA RANDALL.* *Dept. of Physiology, State Univ. of Iowa, Iowa City.*

343. Basal metabolism of the Eskimo. KAARE RODAHL (introduced by A. P. GAGGE). *Arctic Aeromed. Lab., Ladd AFB, Alaska.*

344. An approach to the O_2 consumption of the "active portoplasmic mass" (APM). ALBERT R. BEHNKE. *Naval Technical Unit, Heidelberg, Germany.*

345. Age changes of total body fat in normal adult men. JOSEF BROZEK AND ANCEL KEYS. *Lab. of Physiological Hygiene, Univ. of Minnesota, Minneapolis.*

346. Mineral metabolism of rats receiving sulfonic ion exchange resin chronically. EVAN W. MCCHESNEY. *Sterling-Winthrop Research Inst., Rensselaer, N.Y.*

347. Urinary sodium excretion in normal guinea pigs. HUGO KRUEGER, ROSALIND WULZEN, DARRELL DAVIS* AND LLOYD YONCE.* *Oregon State College, Corvallis.*

348. Energy cost of load carrying on a treadmill. FARRINGTON DANIELS, JR., JAN H. VANDERBIE AND C. LAWRENCE BOMMARITO (introduced by EARL R. LOEW). *Quartermaster Climatic Research Lab., Lawrence, Mass.*

349. Relation of diet to growth adaptation of young rats given large doses of hormones. JOSEPH MEITES. *Dept. of Physiology and Pharmacology, Michigan State College, East Lansing.*

Thursday Afternoon, April 17, 1:15 p.m.

Exposure to Cold and Aviation Physiology

THURSDAY, 1:15 P.M.—MCALPIN, CRYSTAL ROOM

Chairman: C. F. Code

350. Effect of cold on arterial reactivity in vitro. DURWOOD J. SMITH (introduced by WILLIAM S. MCCANN). *Dept. of Medicine and Physiology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.* (Biochem.)

351. Adaptive mechanisms in cold environments. LOREN D. CARLSON, HENRY L. BURNS, ALLEN C. YOUNG AND THOMAS H. HOLMES. *Depts. of Physiology and Biophysics and of Psychiatry, Univ. of Washington School of Medicine, Seattle.*

352. Relation of trunk skin surface to digital skin surface temperatures of clothed men recumbent in dry cold. GEORGE W. MOLNAR. *Army Med. Research Lab., Fort Knox, Ky.*

353. Relationship between joint stiffness and synovial fluid characteristics. J. HUNTER, E. H. KERR* AND M. G. WHILLANS.* *Defence Research Med. Labs., RCAF Station, Toronto, Canada.*

354. Rapid cooling and rewarming of dogs by means of a pump-oxygenator. FRANK GOLLAN. *Fels Research Inst., Antioch College, Yellow Springs, Ohio.*

355. Effects of cold exposure on brain activity. WERNER K. NOELL, STANLEY A. BRILLER* AND WILLIAM B. BRENDEL.* *USAF School of Aviation Medicine, Randolph Field, Tex.*

356. Analysis of the electrolyte changes in rats during cold stress. WALTER M. BOOKER, RAYMOND L. HAYES, FRANCES DENT DA COSTA, WILLIAM JONES, RICHARD HILL AND PATRICK TITUS. *Depts. of Pharmacology and Oral Medicine, Colleges of Medicine and Dentistry, Howard Univ., Washington, D. C.*

357. Relationship of exposure to cold and radiation mortality. J. C. D. BARLOW* AND E. A. SELLERS. *Dept. of Physiology, Univ. of Toronto, Toronto, Canada.*

358. Regulation of breathing of man at altitude. F. G. HALL. *Dept. of Physiology and Pharmacology, Duke Univ. School of Medicine, Durham, N.C.*

359. Effect of variations of oxygen and carbon dioxide tensions in inspired air on latency of blackout produced by pressure on the eyeball. E. H. LAMBERT AND H. BJURSTEDT,* *Mayo Fndn., Rochester, Minn., and Karolinska Inst., Stockholm, Sweden.*

360. Circulatory arrest in dogs following explosive decompression to 30 mm. Hg. F. A. HITCHCOCK, S. A. FRYE AND J. P. KEMPH. *Lab. of Aviation Physiology, Ohio State Univ., Columbus.*

361. Centrifugation of animals about an axis through the body. R. EDELBERG AND H. S. WEISS (introduced by H. M. SWEENEY). *Aero Med. Lab., Wright Air Development Center, Wright-Patterson Air Force Base, Dayton, Ohio.*

Circulation: Cardiac Output II

THURSDAY 1:15 P.M.—MCALPIN, ROOF GARDEN

Chairman: L. N. Katz

362. Simultaneous comparison of two infection methods for cardiac output. HAMPDEN C. LAWSON, W. F. CANTRELL*, J. E. SHAW* AND D. L. BLACKBURN. *Depts. of Physiology and Pharmacology, Univ. of Louisville School of Medicine, Louisville, Ky.*

363. Comparison of the dye dilution cardiac output with a rotameter and the pressure pulse contour method. OSCAR W. SHADLE,* THOMAS B. FERGUSON* AND DONALD E. GREGG. *Dept. of Cardio-Respiratory Diseases, Army Med. Service Graduate School, Washington, D. C.*

364. Effect of blood infusion on left ventricular pressure and stroke volume in the closed

chest dog. THOMAS B. FERGUSON,* OSCAR W. SHADLE* AND DONALD E. GREGG. *Dept. of Cardio-Respiratory Diseases, Army Med. Service Graduate School, Washington, D. C.*

365. Simplified calculation of cardiac output by the dye method utilizing the oximeter. EARL H. WOOD AND HOMER R. WARNER.* *Mayo Fndn., Univ. of Minnesota, and Mayo Clinic, Rochester.*

366. An anatomic dissection of dye dilution curves. M. L. PEARCE, W. P. MCKEEVER, P. DOW, M. MERRELL AND E. V. NEWMAN. *Dept. of Medicine, Johns Hopkins Hosp., Baltimore, Md.*

367. Analysis of the concentration curve in arterial blood resulting from continuous injection of dye. A. R. HOWARD,* PHILIP DOW AND W. F. HAMILTON. *Dept. of Physiology, Med. College of Georgia, Augusta.*

368. Comparison of three methods for repeated rapid determinations of cardiac output. PHILIP DOW, JOHN W. REMINGTON AND ALBERT R. HOWARD.* *Dept. of Physiology, Med. College of Georgia, Augusta.*

369. An evaluation of the dye-dilution method of measuring cardiac output and so-called pulmonary blood volume. JOSEPH T. DOYLE,* JOSEPH S. WILSON,* CHARLES LEPINE* AND JAMES V. WARREN. *Emory Univ., Atlanta, Ga*

370. Bromsulphalein and cardiac output in the hepatectomized dog. ATTIE YVONNE WERNER* AND STEVEN M. HORVATH. *Dept. of Physiology, State Univ. of Iowa, Iowa City.*

371. Dye injection curves in traumatic arteriovenous fistulae in man. GEORGE E. SCHREINER, NORBERT FREINKEL, JOHN W. ATHENS, AND WILLIAM L. STONE, III (introduced by ROBERT W. CLARKE). *Depts. of Surgical Physiology and Biophysics, Army Med. Service Graduate School, Washington, D. C.*

Neurophysiology: Chemical, Electrical, Stimulation

THURSDAY, 1:15 P.M.—MCALPIN, GRAND BALLROOM

Chairman: H. E. Himwich

372. Monosynaptic and multisynaptic arcs within the cerebellum. RAY S. SNIDER AND MARTYN A. GOLDMAN.* *Dept. of Anatomy, Northwestern Univ., Med. School, Chicago, Ill.*

373. Action potentials of the motor cortex evoked by peripheral nerve stimulation. LEONARD I. MALIS,* KARL H. PRIBRAM AND LAWRENCE KRUGER.* *Lab. of Physiology, Yale Univ. School of Medicine, New Haven, and Burlingame Research Lab., Inst. of Living, Hartford, Conn.*

374. Electrophysiologic phenomena evoked by electrical stimulation of the caudate nucleus. FRED A. METTLER, CHRISTIAN A. HOVDE* AND HARRY GRUNDFEST. *Depts. of Neurology and Anatomy, College of Physicians and Surgeons, Columbia Univ., New York City.*

375. Cerebral cortical potentials in anoxia. ROBERT G. GRENELL. *Psychiatric Inst., Univ. of Maryland School of Medicine, Baltimore.*

376. Influence of hypothalamic and thalamic lesions upon the action of nociceptive impulses and CO_2 on the electroencephalogram. WERNER P. KOELLA (introduced by E. GELLHORN). *Lab. of Neurophysiology, Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

377. Effect of chloretone on oxygen consumption and negative spike response of cerebral cortex. P. W. DAVIES. *Dept. of Biophysics, Johns Hopkins Univ., Baltimore, Md.*

378. Phosphorus metabolism and function in the nervous system. L. G. ABOOD AND R. W. GERARD. *Dept. of Physiol., Univ. of Chicago, Chicago, Ill.*

379. Influence of acetylcholine on synaptic transmission in a parasympathetic ganglion (ciliary). CAROLINE TUM SUDEN, E. ROSS HART* AND AMEDEO S. MARRAZZI. *Chemical Corps Med. Lab., Army Chemical Center, Md.*

380. Loss of activity of the succino-oxidase system of excised brain tissue in the presence of succinate. DAVID B. TYLER. *Univ. of Puerto Rico, School of Medicine, San Juan.*

381. Facilitation in the Crustacean neuromuscular system. DEXTER M. EASTON (introduced by T. C. RUCH). *Zoology Dept., Univ. of Washington, Seattle.*

Endocrine: ACTH, Cortisone, DCA

THURSDAY, 1:15 P.M.—MCALPIN, RED ROOM

Chairman: H. Hoagland

382. Adrenal insufficiency in the rhesus monkey. ERNEST KNOBIL,* FREDERICK G. HOFMANN,* THOMAS L. JONES* AND ROY O. GREEP. *Biology Lab., Harvard School of Dental Medicine, Boston, Mass.*

383. Effects of DCA and cortisone on the adrenalectomized rhesus monkey. FREDERICK G. HOFMANN, ERNEST KNOBIL AND THOMAS L. JONES (introduced by C. P. LYMAN). *Biology Lab., Harvard School of Dental Medicine, Boston, Mass.*

384. Toxicity of desoxycorticosterone acetate (CDA) in rabbits on high salt diet. G. M. C. MASSON, L. A. LEWIS, A. C. CORCORAN AND I. H. PAGE. *Cleveland Clinic Fndn. and Frank E. Bunts Educational Inst., Cleveland, Ohio.*

385. Relative effectiveness of different esters of dexoycorticosterone. ROBERT GAUNT, JAMES H. LEATHEM, CONSTANCE HOWELL* AND NANCY ANTONCHAK.* *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

386. Effects of cortisone on muscular contraction. E. C. DEL POZO AND J. NEGRETE. *Instituto de Salubridad y Enfermedades Tropicales, Mexico, D. F.*

387. Localization of cortisone in an inflamed area. VALY MENKIN. *Agnes Barr Chase Fndn. for Cancer Research, Temple Univ. School of Medicine, Philadelphia, Pa.*

388. Corticotropin preparations which, when given intramuscularly, exhibit human activity several times that anticipated from animal bioassay. WILLIAM Q. WOLFSON AND WILLIAM D. ROBINSON (introduced by REUBEN L. KAHN). *Rackham Arthritis Research Unit, Dept. of Internal Medicine Univ. of Michigan Med. School, Ann Arbor*

389. Extraction and fractionation of urinary corticoids. LOUISE P. ROMANOFF,* ROSALIE S. WOLF* AND GREGORY PINCUS. *Worcester Fndn. for Exptl. Biology, Shrewsbury, Mass.*

390. Mechanism of the anti-inflammatory action of sodium salicylate. G. UNGAR, E. DAMGAARD* AND F. P. HUMMEL.* *Rheumatic Fever Research Inst., Northwestern Univ. Med. School, Evanston, Ill.*

391. Further studies concerning the role of somatotrophic hormone (STH) in the body's defense against infection. HANS SELYE. *Institut de Médecine et Chirurgie expérimentales, Université de Montréal, Canada.*

392. Withdrawn.

Muscle: Physical

THURSDAY, 1:15 P.M.—MCALPIN, GREEN ROOM

Chairman: Benjamin Libet

393. Specialized electromyography in supplement to clinical observations during hyperkinetic states in man ('functional nervous conditions'). EDMUND JACOBSON. *Lab. for Clin. Physiology, Chicago, Ill.*

394. Veratrine electrical responses of muscle treated with anticholinesterases and with sodium lack. GERALDINE KIEBEL* AND ALEXANDER SANDOW. *Washington Square College of Arts and Science, New York Univ., New York City.*

395. Electrolyte and water shifts in human muscle during in vitro edema. CHARLES L. FOX, JR. AND SIGMUND LASKER.* *New York Med. College and Flower and Fifth Avenue Hosp., New York City.*

396. Contractile system of cardiac muscle. NANCY CANTOR EDDY* AND F. J. M. SICHEL. *Dept. of Physiology and Biophysics, Univ. of Vermont College of Medicine, Burlington.*

397. Some properties of actomyosin strips of heart muscle. MAX TAESCHLER* AND R. J. BING. *Dept. of Medicine and Physiology, Univ. of Alabama Med. School, Birmingham.*

398. Tension curves characteristic of muscles in which the fibers are not arranged in parallel. J. E. MARKEE AND M. WILLIAMS. *Dept. of Anatomy, Duke Univ., Durham, N. C.*

399. Rate of atrophy in muscles immobilized at different lengths. H. J. RALSTON, B. FEINSTEIN* AND V. T. INMAN.* *College of Physicians and Surgeons, and Univ. of California Med. School, San Franscico.*

400. Withdrawn.

401. Nomogram for cardiac synergism of calcium, potassium and digitalis bodies (for mammalian myocardium). RICHARD M. TAYLOR* AND WILLIAM T. SALTER. *Labs. of Pharmacology and Toxicology, Yale Univ. School of Medicine, New Haven, Conn.*

402. Membrane processes in excitation-contraction (E-C) coupling. ALEXANDER SANDOW AND ARTHUR J. KAHN.* *Dept. of Biology, Washington Square College of Arts and Science, New York Univ., New York City.*

403. Membrane polarization and mechanical responses in an invertebrate smooth muscle. BETTY M. TWAROG (introduced by J. H. WELSH). *Biological Labs., Harvard Univ., Cambridge, Mass.*

Respiration I

THURSDAY, 1:15 P.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: N. W. Shock

404. Comparison of eosinophil responses in human subjects during flights in aircraft, decompression to 40,000 feet and exposure to cold. HENRY B. HALE AND JOHN E. KEATOR (introduced by HARRY F. ADLER). *USAF School of Aviation Medicine, Randolph Air Force Base, Randolph Field, Tex.*

405. Forces produced in the thorax by explosive decompression. EDWIN G. VEIL (introduced by J. W. HEIM). *Aero Med. Lab., Wright Air Development Center, Wright-Patterson Air Force Base, Dayton, Ohio.*

406. Changes in the resistance to pulmonary blood flow due to altering the inspired gas tensions. R. C. STROUD* AND H. RAHN. *Dept. of Physiology and Vital Economics, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

407. Effect of negative pressure breathing on renal function in human beings. H. W. SIEKER,* O. H. GAUER* AND J. P. HENRY. *Aero Med. Lab., Wright-Patterson Air Force Base, Dayton, Ohio.*

408. Effect of hypoxia and hypercapnea on the standing potential of man. HAROLD S. BURR* AND ROBERT B. LIVINGSTON. *Section of Neuroanatomy and Lab. of Physiology, Yale Univ. School of Medicine, New Haven, Conn.*

409. The carbon dioxide tolerance of the dog heart. E. B. BROWN, JR. AND FLETCHER A. MILLER.* *Depts. of Physiology and Surgery, Univ. of Minnesota, Minneapolis.*

410. Effect of increased alveolar carbon dioxide tensions on various physiological functions. K. E. SCHAEFER, E. R. CORNISH AND S. E. STUNTZ (introduced by E. S. MENDELSON). *Physiology Branch, U. S. Naval Med. Research Lab., New London, Conn.*

411. Regulation of breathing during exercise. FRED KAO* AND FRED S. GRODINS. *Dept. of Physiology, Northwestern Univ. Med. School, Chicago, Ill.*

412. Hyperpnea following release of arterial tourniquets. JOHN B. HICKAM, *Duke Univ. Hosp., Durham, N. C.*

413. Manual artificial respiration in rats and guinea pigs. HENRY E. SWANN, JR.,* PETER V. KARPOVICH AND DAVID B. DILL. *Chemical Center Med. Labs., Army Chemical Center, Md., and Springfield College, Springfield, Mass.*

414. Physical properties of the lungs in experimental pulmonary edema. JAMES L. WHITTENBERGER, JOHN E. AFFELDT* AND JERE MEAD.* *Dept. of Physiology, Harvard School of Public Health, Boston, Mass.*

Physiology Society Business Meeting

THURSDAY, 4:00 P.M.—STATLER, GEORGIAN ROOM

Friday Morning, April 18, 9:00 a.m.

Blood Coagulation I

FRIDAY, 9:00 A.M.—MCALPIN, CRYSTAL ROOM

Chairman: A. J. Quick

415. One-stage and two-stage methods for estimation of plasma anticephalin activity. R. R. HOLBURN,* R. T. CARROLL* AND L. M. TOCANTINS. *Dept. of Medicine, Jefferson Med. College and Hosp., Philadelphia, Pa.*

416. Determination of phenylindanedions. J. LOWENTHAL,* M. W. OGILVIE* AND L. B. JAQUES. *Dept. of Physiology, Univ. of Saskatchewan, Saskatchewan, Canada.*

417. A modified 1-stage prothrombin method controlling thromboplastin and other variables. ARNOLD G. WARE AND ROBERT STRAGNELL.* *Depts. of Biochemistry and Medicine, Univ. of Southern California School of Medicine, and Lab. Div., Los Angeles County Hosp., Los Angeles, Calif.* (Biochem.)

418. A bacterial enzyme which inactivates thromboplastic suspensions. S. GOLLUB, D. FELDMAN, F. E. KAPLAN, D. C. SCHECHTER AND D. R. MERANZE (introduced by L. H. TUFT). *Research Dept., Mt. Sinai Hosp., Philadelphia, Pa.* (Immunol.)

419. Effect of modifications of bedside test on its correlation with the one-stage prothrombin test. DANIEL W. LEWIS* AND MURIEL PLATT MUNRO. *Dept. of Medicine and Charlotte Drake Cardeza Fndn., Jefferson Med. College and Hosp., Philadelphia, Pa.* (Biochem.)

420. Interaction of hyaluronidase with thromboplastic components of blood coagulation. SILVIO FIALA AND KARL ROTH (introduced by F. M. BERGER). *Dept. of Research, Albert Einstein Med. Center, Philadelphia, Pa.* (Pharmacol.)

421. Stability of human plasma prothrombin fractions. BENJAMIN ALEXANDER AND GRETA LANDWEHR.* *Yamins Research Lab., Beth Israel Hosp., and Dept. of Medicine, Harvard Med. School, Boston, Mass.* (Biochem.)

422. Some variables in serum prothrombin activity. MURRAY WEINER AND NIEL WALD (introduced by WILLIAM GOLDRING). *Third New York Univ. Med. and Research Services, Goldwater Memorial Hosp., Welfare Island, N. Y.*

423. An accelerator of prothrombin conversion arising in purified prothrombin preparations. ROBERT I. MCCLAUGHRY* AND WALTER H. SEEGERS. *Dept. of Physiology and Pharmacology, Wayne Univ., Detroit, Mich.*

Heart: Rate, Excitability, Reflexes, etc.

FRIDAY, 9:00 A.M.—MCALPIN, ROOF GARDEN

Chairman: H. J. Curtis

424. Effect of adrenaline on concentration of energy rich phosphates and of glycogen of dog heart. A. G. MULDER, AKIRA OMACHI,* BLANCHE TIGERMAN* AND MICHAEL RUANE.* *Dept. of Physiology, Stritch School of Medicine, and Graduate School of Loyola Univ., Chicago, Ill.*

425. Effects of some steroids on membrane potentials of single ventricular fibers of frog heart. LOWELL A. WOODBURY AND HANS H. HECHT.* *Depts. of Physiology and Medicine, Univ. of Utah College of Medicine, Salt Lake City.*

426. The T deflection of ventricular heart muscle strips. Solomon Garb (introduced by MCKEEN CATTELL). *Dept. of Pharmacology, Cornell Univ. Med. College, New York City.*

427. Investigation of conditions favoring cardiac arrest. C. W. WHITE, JR., AND MARTIN RYAN (introduced by GEORGE L. MAISON). *Dept. of Pharmacology, Boston Univ. School of Medicine, Boston, Mass.*

428. Acetylcholine on heart rate in unanesthetized compared with anesthetized dogs. HARRY A. TEITELBAUM* AND W. HORSLEY GANTT. *Pavlovian Lab., Phipps Psychiatric Clinic, Johns Hopkins Univ., Baltimore, Md.*

429. Auricular excitability of the intact dog heart. RAJINDER S. SIKAND* AND LOUIS H. NAHUM. *Lab. of Physiology, Yale Univ. School of Medicine, New Haven, Conn.*

430. New method of inducing repeated short bursts of ventricular cardiac arrhythmias in the dog. A. SOKALCHUK, R. E. DAILEY AND J. N. CROWDER (introduced by J. W. STUTZMAN). *Research and Development Div., Smith Kline and French Labs., Philadelphia, Pa.*

431. Prevention of development of cardiac arrhythmias by regitine (C-7337). ALFRED LEIMDORFER. *Dept. of Pharmacology, Loyola Univ., Chicago, Ill.*

432. Evaluation of drug protection against experimentally induced ventricular fibrillation in 499 dogs: Quinidine, Procaine, Pronestyl, Xylocaine, Trasentine, Pendiomide and Ciba

1194. GEORGE R. MENEELY, JAMES S. ANDERSON, LESTER L. HIBBETT,* JAMES E. MCCARTY,* SAM E. STEPHENSON, JR.,* EDWIN R. YOUNG* AND CON O. T. BALL.* *Research Lab., Thayer Veterans Administration Hosp., and Dept. of Medicine, Vanderbilt Univ. School of Medicine, Nashville, Tenn.*

433. Electric countershock as a cardiac defibrillator. HARLAN E. LAPE,* FRANK G. MILLS* AND GEORGE L. MAISON. *Dept. of Pharmacology, Boston Univ. School of Medicine, Boston, Mass.*

434. Relation of increased body temperature to ventricular fibrillation induced by ether inhalation in the rat. SHEPPARD M. WALKER. *Dept. of Physiology, Univ. of Louisville School of Medicine, Louisville, Ky.*

435. Effect of temperature of the heart on the susceptibility to ventricular fibrillation. JOSEPH R. DIPALMA. *Hahnemann Med. College, Philadelphia, Pa.*

Neurophysiology: Cerebrum, Brain Stem, Localization, C. S. Fluid

FRIDAY, 9:00 A.M.—MCALPIN, GRAND BALLROOM

Chairman: Mary A. B. Brazier

436. New criteria for division of acoustic cortex into functional areas. JOHN C. LILLY AND RUTH CHERRY.* *E. R. Johnson Fndn., Univ. of Pennsylvania, Philadelphia.*

437. An analysis in depth of auditory and optic potential fields of cerebral cortex. NATHANIEL A. BUCHWALD* AND BERRY CAMPBELL. *Dept. of Anatomy, Univ. of Minnesota Med. School, Minneapolis.*

438. Patterns of localization in somatic efferent and afferent systems of the cerebral cortex of the chimpanzee. C. WOOLSEY, J. BARNARD,* R. BUTLER,* G. CRANDALL,* J. FAY,* R. OSTENSO,* P. SETTLAGE* AND A. TRAVIS.* *Dept. of Physiology, Univ. of Wisconsin, Med. School, Madison.*

439. Organization in somatosensory systems. V. E. AMASSIAN (introduced by A. A. WARD, JR.). *Dept. of Physiology and Biophysics, Univ. of Washington School of Medicine, Seattle.*

440. Relationship between superficial and hidden motor cortex in the unanesthetized cat. JOSÉ M. R. DELGADO (introduced by ROBERT B. LIVINGSTON). *Lab. of Physiology, Yale Univ. School of Medicine, New Haven, Conn.*

441. Independence of the diffuse thalamo-cortical projection system shown by specific nuclear destruction. JOHN HANBERY AND HERBERT H. JASPER. *Montreal Neurological Inst. and McGill Univ., Montreal, Canada.*

442. Effects of cerebral lesions on intellectual functioning in man. H. L. TEUBER,* W. S. BATTERSBY* AND M. B. BENDER. *Psychophysiological Lab., New York Univ. College of Medicine, New York City.*

443. Central nervous system lesions and aggressive behavior in cats. L. SCHREINER,* A. KLING* AND R. GALAMBOS. *Army Med. Service Graduate School, Washington, D.C.*

444. Comparative effects of antiepileptic and other drugs upon forced circling produced by intracarotid injection of di-isopropyl fluorophosphate (DFP). H. E. HIMWICH,* I. H. WEINER,* ALAYNE COOMBS* AND EDITH CAMPBELL.* *Chemical Corps. Med. Labs., Army Chemical Center, Md.*

445. Effect of di-isopropyl fluorophosphate and of dibucaine on depressor responses evoked by topical application of methacholine chloride to cerebral cortex. E. C. HOFF, E. D. SHACKELFORD,* E. H. SHARP,* L. E. RENNIE* AND E. L. KIRBY.* *Neurological Science Lab., Med. College of Virginia, Richmond.*

446. Organization of central respiratory mechanism in cats. S. H. NGAI,* M. J. FRUMIN* AND S. C. WANG. *Depts. of Anesthesiology and Physiology, Columbia Univ. College of Physicians and Surgeons, New York City.*

447. Relationships between bulbar respiratory, vasomotor, and somatic facilitatory and inhibitory areas. L. M. N. BACH. *Dept. of Physiology, Tulane Univ. School of Medicine, New Orleans, La.*

Endocrine: Insulin, Diabetes, Carbohydrate Metabolism

FRIDAY, 9:00 A.M.—MCALPIN, RED ROOM

Chairman: R. Levine

448. Effect of adrenal cortical atrophy on course of alloxan diabetes. JOHN NICHOLS AND H. L. SHEEHAN.* *Dept. of Pathology, Univ. of Liverpool, Liverpool, England.*

449. RBC ergothioneine levels in experimentally produced diabetes in rats. CLARISSA H. BEATTY. *Depts. of Biochemistry and Physiology, Univ. of Oregon Med. School, Portland.*

450. Effect of rate of injection of alloxan on development of diabetes in rabbits. I. J. PINCUS, J. J. HURWITZ* AND M. E. SCOTT.* *Dept. of Physiology, Jefferson Med. College, Philadelphia, Pa.*

451. Effect of insulin on phosphate transport and glucose metabolism. JACOB SACKS AND F. MAROTT SINEX.* *Biology and Med. Depts., Brookhaven Natl. Lab., Upton, L. I., N. Y.*

452. Demonstration of the anti-ketogenic effect of insulin in surviving liver slices obtained

from normal rats. JAY TEPPERMAN, HELEN M. TEPPERMAN* AND JANET M. DEWITT.* *Dept. of Pharmacology, State Univ. of New York College of Medicine, Syracuse.*

453. Effects of pancreatic hyperglycemic factor on hepatic carbohydrate metabolism of man. J. D. MYERS, ROBERT F. KIBLER* AND W. JAPE TAYLOR.* *Dept. of Medicine, Duke Univ., Durham, N. C.*

454. Action of insulin on transfer of sugar across the cell membrane; the common chemical configuration of sugars affected by the hormone. M. S. GOLDSTEIN,* LESTER HENRY,* B. HUDDLESTUN* AND R. LEVINE. *Dept. of Metabolic and Endocrine Research, Med. Research Inst., Michael Reese Hosp., Chicago, Ill.*

455. Comparison of effects of epinephrine and norepinephrine on carbohydrate metabolism in the rat. WALTER L. BLOOM AND JANE A. RUSSELL. *Dept. of Biochemistry, Emory Univ. School of Medicine, Ga.*

456. Metabolism by thyroid glands of hypophysectomized C_3H mice. S. H. WOLLMAN AND R. O. SCOW (introduced by ROY HERTZ). *Natl. Cancer Inst. and Natl. Inst. of Arthritis and Metabolic Diseases, Bethesda, Md.*

457. Relation between dosage of thyroid hormone and metabolic increase in thyroidectomized rat used to determine influence of iodinization on thyroid globulin. ARTHUR E. MEYER. *Fellows, Pharmaceutical Labs. New York City.*

General: Cellular Enzymes I

FRIDAY, 9:00 A.M.—MCALPIN, GREEN ROOM

Chairman: F. O. Schmitt

458. Effects of dinitrophenol (DNP) on endogenous respiration and fermentation of yeast. ASER ROTHSTEIN AND HARRY BERKE.* *Dept. of Radiation Biology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

459. Effect of nitrogen mustard on bakers' yeast. JOHN O. HUTCHENS AND BETTY PODOLSKY.* *Univ. of Chicago, Chicago, Ill.*

460. Analysis of kinetics and thermodynamics of the catalase-hydrogen peroxide system. ROLAND F. BEERS, JR.* AND IRWIN W. SIZER. *Dept. of Biology, Mass. Inst. of Technology, Cambridge, Mass.*

461. Oxygen consumption during the cleavage of single cells. P. F. SCHOLANDER, C. L. CLAFF* AND S. L. SVEINSSON.* *Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

462. Malonate inhibition of egg cleavage and its reversal by succinate, fumarate and ATP. MANFRED BRUST AND ROBERT C. BARNETT (introduced by C. L. PROSSER). *Marine Biological Lab., Woods Hole, Mass.; Committee on Physico-Chemical Biology, Univ. of Illinois, Urbana; and Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*

463. Some effects of NaCl concentration on development of chick blastoderms in culture. EVELYN HOWARD. *Dept. of Physiology, Johns Hopkins Med. School, Baltimore, Md.*

464. Reversible fibril formation exhibited by a protein in pancreatic extracts. JEROME GROSS (introduced by FRANCIS O. SCHMITT). *Research Labs. of the Med. Clinic, Massachusetts General Hosp., Boston.*

465. Analysis of alcohol inhibition of the *Cypridina* luminescent reaction. AURIN M. CHASE. *Physiological Labs., Princeton Univ., Princeton, N. J., and the Marine Biological Lab., Woods Hole, Mass.*

466. Effect of oxygen on utilization of ATP for luminescence. J. WOODLAND HASTINGS (introduced by W. D. MCELROY). *McCollum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md.*

467. Biosynthesis of cholesterol. E. SCHWENK* AND N. T. WERTHESSEN. *Worchester Fndn. for Experimental Biology, Shrewsbury, Mass., and the Fndn. of Applied Research, San Antonio, Texas.*

468. Microanalysis of fatty acid mixtures. SHU-HUAI MAI AND FRANK A. RAILA (introduced by K. K. JONES). *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

Respiration II

FRIDAY, 9:00 A.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: J. L. Whittenberger

469. Significance of increased alveolar-arterial oxygen tension difference during exercise. GILES F. FILLEY, FERNAND GREGOIRE AND GEORGE W. WRIGHT (introduced by F. W. KLEMPERER). *Dept. of Physiology, E. L. Trudeau Fndn., Saranac Lake, N. Y.* (2)

470. Resistance to airflow during respiratory cycle. B. B. ROSS (introduced by A. B. OTIS). *Dept. of Physiology and Vital Economics, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

471. Effect of change of posture on resting level of lungs and expiratory reserve volume in patients with emphysema. MORTON GALDSTON AND IRIS WEISS.* *Third Med. Div., Goldwater Memorial Hosp., Welfare Island, N. Y.*

472. Effects of controlled low oxygen breathing upon exchange of respiratory gases in humans. BEN VAUGHAN BRANSCOMB AND GEORGE W. WRIGHT (introduced by J. N. STANNARD). *Dept. of Physiology, E. L. Trudeau Fndn., Saranac Lake, N. Y.*

473. Observations on CO pulmonary diffusing capacity. R. E. FORSTER, II, AND W. S. FOWLER. *Depts. of Physiology, Pharmacology and Anesthesiology, Graduate School of Medicine, Univ. of Pennsylvania, Philadelphia.*

474. Maximal diffusing capacity of the lungs. RICHARD L. RILEY. *Dept. of Environmental Medicine, Johns Hopkins Univ., Baltimore, Md.*

475. Changes in maximum diffusing capacity of the lungs with age. JEROME E. COHN (introduced by JOSEPH L. LILLIENTHAL, JR.). *Dept. of Environmental Medicine, Johns Hopkins Univ., Baltimore, Md.*

476. Inhomogeneity of alveolar air: spot samples by catheter. A. A. BECHTEL (introduced by E. A. REED). *Dept. of Physiology, Hahnemann Med. College, Philadelphia, Pa.*

477. Alveolar O_2 and CO_2 during inspiration, expiration and breath holding. A. B. DUBOIS (introduced by W. O. FENN). *Dept. of Physiology and Vital Economics, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

478. Pressure-volume measurements upon lungs and thorax. ROBERT G. NIMS,* STELLA Y. BOTELHO,* OVE NISELL* AND J. H. COMROE, JR. *Dept. of Physiology and Pharmacology, Univ. of Pennsylvania, Graduate School of Medicine, Philadelphia.*

479. Residual air volumes in the supine and standing positions. HURLEY L. MOTLEY. *Dept. of Medicine, Jefferson Med. College, Philadelphia, Pa.*

Friday Afternoon, April 18, 1:15 p.m.

Blood Coagulation II

FRIDAY, 1:15 P.M.—MCALPIN, CRYSTAL ROOM

Chairman: Philip Dow

480. Coagulation changes in isolated venous segments in the dog. STANFORD WESSLER (introduced by BENJAMIN ALEXANDER). *Yamins Research Lab., Beth Israel Hosp., Boston, Mass., and the Dept. of Medicine, Harvard Med. School, Boston, Mass.* (Biochem.)

481. In vivo phenomena suggesting a heparin-lipo -protein reaction. C. B. WELD AND J. J. SPITZER* *Dept. of Physiology, Dalhousie Univ., Halifax, Canada.*

482. Histamine release from sensitized rabbit blood cells: further evidence against participation of plasma protease. FLOYD C. MCINTIRE* AND L. W. ROTH. *Abbott Labs,. North Chicago, Ill.*

483. Inhibition of fibrinolysin and trypsin. JESSICA H. LEWIS AND JOHN H. FERGUSON. *Dept. of Physiology, Univ. of North Carolina, Chapel Hill.*

484. Survival of human blood platelets *in vitro*. ROBERT C. HARTMANN AND C. LOCKARD CONLEY (introduced by DAVID GROB). *Dept. of Medicine, Johns Hopkins Univ. and Hosp., Baltimore, Md.*

485. Latency of response to bacterial pyrogens as affected by previous incubation with blood. RONALD GRANT AND WILLIAM J. WHALEN.* *Dept. of Physiology, Stanford Univ., Stanford, Calif.*

486. Adhesion of fibrin clots to tissue. PETER R. MORRISON AND FREDRIC DOPPELT.* *Depts. of Physiology and Zoology, Univ. of Wisconsin, Madison.* (Biochem.)

487. Dissolution of fibrin by neutral inorganic salts. SIDNEY SHULMAN AND SIDNEY KATZ (introduced by JOHN D. FERRY). *Dept. of Chemistry, Univ. of Wisconsin, Madison.* (2)

488. Blood-clotting studies following *internal* radiation. JOHN H. FERGUSON, G. A. ANDREWS AND MARSHALL BRUCER. *Physiology Dept., Univ. of North Carolina, Chapel Hill, and the Oak Ridge Inst. of Nuclear Studies, Oak Ridge, Tenn.*

489. Withdrawn.

Circulation: Capillary and Muscle, Chemical, etc.

FRIDAY 1:15 P.M.—MCALPIN, ROOF GARDEN

Chairman: Ephraim Shorr

490. Oxygen delivery from erythrocytes polarographically determined. J. PERCY BAUMBERGER AND GABOR MARKUS.* *Physiology Dept., Stanford Univ. Med. School, Stanford, Calif.*

491. Study of the interrelation of circulatory mixing and transcapillary exchange using T-1824, Na^{24} and K^{42}. RICHARD R. OVERMAN

AND A. KENNON DAVIS.* *Dept. of Physiology, Univ. of Tennessee College of Medicine, Memphis.*

492. Kinetics of D_2O exchange in perfused organs. JOHN A. JOHNSON AND H. MEAD CAVERT (introduced by H. B. STEINBACH). *Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

493. Capillary-tissue exchange of non-metabolized substances studied as a function of volume perfused. REUBEN COPPERMAN (introduced by SEYMOUR S. KETY). *Dept. of Physiology and Pharmacology, Univ. of Pennsylvania, Graduate School of Medicine, Philadelphia.*

494. Disappearance rate of fluorescein conjugated plasma proteins from circulation of hypoxic rats. ALFRED A. SCHILLER AND GLORYE N. WOOL.* *Dept. of Physiology, Univ. of Illinois College of Medicine, Chicago.*

495. Transcapillary movement of and isotope from a nonuniformly mixed circulatory pool. C. W. SHEPPARD AND WARD SANGREN.* *Biology Div. and Mathematics Panel, Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

496. Effects of 20,000 feet simulated altitude on the myoglobin content of animals with and without exercise. ROBERT T. CLARK, JR., DOMINIC CRISCUOLO, AND CHARLES K. COULSON (introduced by ULRICH C. LUFT). *USAF School of Aviation Medicine, Randolph Air Force Base, Randolph Field, Texas.*

497. Actomyosin content of dog myocardium. R. E. RANNEY (introduced by CLARENCE A. MAASKE). *Dept. of Physiology and Pharmacology, Univ. of Colorado School of Medicine, Denver.*

498. Effect of sodium fluoroacetate on metabolism of isotopic acetate and lactate by isolated perfused dog gastrocnemius. NATHAN LIFSON AND JOYCE STOLEN.* *Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

499. Inulin and chloride space in muscle. ERNEST COTLOVE (introduced by BERT R. BOONE). *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

500. Selective ionic accumulation in muscle cells. GILBERT LING. *Wilmer Inst., Johns Hopkins, Hosp. Baltimore, Md.*

Neurophysiology: Sense Organs, Pain, etc.

FRIDAY, 1:15 P.M.—MCALPIN, GRAND BALLROOM

Chairman: H. Davis

501. Latency of neural components in round window response to pure tones. WALTER A. ROSENBLITH AND MARK R. ROSENZWEIG (introduced by S. S. STEVENS). *Massachusetts Inst. of Technology, Cambridge, and Univ. of California, Berkeley.*

502. Velocity and amplitude of microphonic response of guinea pig's cochlea. H. DAVIS, I. TASAKI* AND J. P. LEGOUIX.* *Central Inst. for the Deaf, St. Louis, Mo.*

503. An electrophysiological determination of tonotopic organization in auditory cortex of the cat. J. E. HIND (introduced by W. D. NEFF). *Div. of Otolaryngology and Lab. of Physiological Psychology, Univ. of Chicago, Chicago, Ill.*

504. Critical flicker fusion in the rat. HARRY J. JERISON,* M. G. GOLDZBAND* AND GEORGE CLARK. *Dept. of Psychology, Univ. of Chicago, and Dept. of Anatomy, Chicago Med. School, Chicago, Ill.*

505. Retinal response to color shift. A. FORBES AND S. BURLEIGH.* *Biological Labs., Harvard Univ., Cambridge, Mass.*

506. Color of ultraviolet light. A. BACHEM. *Dept. of Physiology, Univ. of Illinois, Chicago Professional Colleges, Chicago.*

507. Effects of electric current on responses of single photoreceptor units in the eye of Limulus. H. K. HARTLINE, N. A. COULTER, JR.* AND H. G. WAGNER. *Jenkins Labs. of Biophysics, Johns Hopkins Univ., Baltimore, Md., and the Naval Med. Research Inst., Bethesda, Md.*

508. Squid rhodopsin. ROBERT C. C. ST. GEORGE,* JONAS M. GOLDSTONE* AND GEORGE WALD. *Biological Labs., Harvard Univ., Cambridge, Mass.*

509. Taste sensitivity to homologous alcohols in oil. V. G. DETHIER. *Dept. of Biology, Johns Hopkins Univ., Baltimore, Md.*

510. Drug effects on mammalian muscle spindles. CARLTON C. HUNT. *Wilmer Inst., Johns Hopkins Hosp., Baltimore, Md.*

511. Thresholds for pain and reflex contraction as measured by the thermal radiation method. JAMES D. HARDY. *Dept. of Physiology, Cornell Univ. Med. College, New York City.*

512. Mechanism of generalized motor reactions in cats under chloralose anesthesia. E. C. ALVORD, JR., AND M. G. F. FUORTES (introduced by D. MCK. RIOCH). *Army Med. Service Graduate School, Washington, D. C.*

Endocrine: Adrenals

FRIDAY, 1:15 P.M.—MCALPIN, RED ROOM

Chairman: W. M. Booker

513. Ascorbic acid-adrenal cortical relations to formed elements of blood. SAM J. PILIERO*

AND ALBERT S. GORDON. *Dept. of Biology, Washington Square College of Arts and Science, New York Univ., New York City.*

514. Steroidal studies on patients with adrenal virilism. JOSEPH W. JAILER AND JEAN LOUCHART.* *Columbia Univ., College of Physicians and Surgeons, and the Presbyterian Hosp., New York City.*

515. Water diuresis in adrenalectomized rats treated with cortisone acetate and norepinephrine. W. J. EVERSOLE AND F. A. GIERE.* *Dept. of Biology, Univ. of New Mexico, Albuquerque.*

516. Tissue electrolyte and water changes after glucose per os in epinephrine protected and unprotected adrenalectomized rats. ABRAHAM DURY AND THOMAS N. JOHNSTON.* *Dorn Lab. of Med. Research, Bradford Hosp., Bradford, Pa.*

517. Accelerating effect of adrenalectomy on regrowth of hair in the rat considered in relation to pituitary histology. ISOLDE T. ZECKWER. *Dept. of Pathology, Univ. of Pennsylvania Med. School, Philadelphia.*

518. Stimulation by corticotropin of formation of corticoids by isolated rat adrenals. MURRAY SAFFRAN, BERNARD GRAD AND MARGARET J. BAYLISS (introduced by R. A. CLEGHORN). *Allan Memorial Inst. of Psychiatry, McGill Univ., Montreal, Quebec, Canada.*

519. Mechanism of adrenal cortex reaction to stress. L. L. LANGLEY, P. W. SCOKEL* AND J. A. WHITESIDE.* *Dept. of Physiology, Med. College of Alabama, and the Univ. of Alabama School of Dentistry, Birmingham.*

520. Respiration of rat thymus in relation to body weight: effect of adrenalectomy. MARION K. BIRMINGHAM AND MARIE LOUISE DESBARATS (introduced by ORVILLE F. DENSTEDT). *Allan Memorial Inst., McGill Univ., Montreal, Canada.*

521. Blood flow and oxygen consumption of brain in relation to adrenal cortical action. JOHN R. BERGEN,* CHARLOTTE HUNT* AND HUDSON HOAGLAND. *Worcester Fndn. for Exptl. Biology, Shrewsbury, Mass.*

522. Adrenal changes associated with a low protein diet. HERBERT GERSHBERG* AND ELAINE P. RALLI. *Dept. of Medicine, College of Medicine, New York Univ.-Bellevue Med. Center, New York City.*

General: Cellular Enzymes II

FRIDAY, 1:15 P.M.—MCALPIN, GREEN ROOM

Chairman: John Field II

523. Withdrawn.

524. Influence of ethyl alcohol and testosterone on respiration of rabbit liver and kidney slices. THOMAS C. SMITH* AND CHARLES D. KOCHAKIAN. *Oklahoma Med. Research Inst. and Hosp., Oklahoma City.*

525. Respiration and anaerobic glycolysis of developing limb buds of chick embryos. WASLEY D. YUSHOK* AND WIKTOR W. NOWINSKI. *Tissue Metabolism Research Lab., and Dept. of Biochemistry, Univ. of Texas Med. Branch, Galveston.*

526. Response of certain microorganisms to a pterine compound isolated from the developing egg of the grasshopper. L. E. BURGESS,* E. H. MCNEIL* AND D. T. ROLFE. *Dept. of Physiology, Meharry Med. College, Nashville, Tenn.*

527. Succinic dehydrogenase in mitotically active and blocked embryonic cells. J. H. BODINE. *Zoological Lab., State Univ. of Iowa, Iowa City.*

528. Mitochondria and tissue growth: a biochemical and morphological study. G. S. CHRISTIANSEN, BETTY DANES AND P. J. LEINFELDER (introduced by H. M. HINES). *Depts. of Ophthalmology and Physiology, State Univ. of Iowa, College of Medicine, Iowa City.*

529. Some effects of short chain fatty acids on phosphate and carbohydrate metabolism of yeast. FREDERICK E. SAMSON,* ARNOLD M. KATZ,* DANIEL L. HARRIS,* AND J. Z. HEARON. *Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*

530. Unsaturated fatty acids in rabbit bone marrow. JOHN D. EVANS (introduced by ESTHER M. GREISHEIMER). *Dept. of Physiology, Temple Univ. School of Medicine, Philadelphia, Pa.*

531. Alteration of growth response of tissue cells in vitro in serum from partially hepatectomized rats. ANDRÉ D. GLINOS* AND GEORGE O. GEY. *Johns Hopkins Hosp. and Med. School, Baltimore, Md.*

532. Peptidases of the intestinal mucosa of *Ascaris lumbricoides*. MARY P. CARPENTER (introduced by A. E. WOODWARD). *Dept. of Zoology, Univ. of Michigan, Ann Arbor.*

Respiration III

FRIDAY, 1:15 P.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: A. B. Otis

533. Importance of the negative pressure phase in mechanical breathing machines. J. V. MALONEY, JR., J. O. ELAM,* S. W. HANDFORD,* G. A. BALLA,* D. W. EASTWOOD* AND R. H. TEN PAS.* *Naval Med. Field Research*

Lab., Camp Lejeune, N. C., and the Div. of Anesthesiology, Washington Univ., St. Louis, Mo.

534. Comparison of methods for measuring pulmonary resistance. JERE MEAD (introduced by W. H. FORBES). *Dept. of Physiology, Harvard School of Public Health, Boston, Mass.*

535. A method for producing uniform distribution of inspired gas. W. S. FOWLER AND R. E. FORSTER, II. *Depts. of Physiology, Pharmacology and Anesthesiology, Univ. of Pennsylvania Graduate School of Medicine, Philadelphia.*

536. Vascular patterns in the ear as a source of error in oximetry. W. PAUL, B. G. GRAPES AND R. H. TAPLIN (introduced by J. K. W. FERGUSON). *Dept. of Pharmacology, Univ. of Toronto, Toronto, Canada.*

537. A method for determination of lung compartments and bellows function in the human being. ARTHUR H. NORRIS,* MILTON LANDOWNE AND NATHAN W. SHOCK. *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md., and Section on Gerontology, Baltimore City Hosp., Baltimore, Md.*

538. A portable pneumotachograph and its application to a study of human and canine respiration. PAUL E. MORROW. *Dept. of Radiation Biology, Div. of Pharmacology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.* (Pathol.)

539. Calibration of the nitrogen meter. NILS LUNDGREN,* CLAYTON S. WHITE* AND WALTER M. BOOTHBY. *Dept. of Respiratory Physiology, Lovelace Fndn. for Med. Education and Research, Albuquerque, New Mexico.*

540. Pneumatic refractometer—a continuous fast recording gas analyzer. HANS G. CLAMANN (introduced by OTIS O. BENSON, JR.). *USAF School of Aviation Medicine, Randolph Air Force Base, Randolph Field, Texas.*

541. A systematic error in infrared analysis for carbon dioxide in respiratory gas mixtures. RICHARD W. STOW (introduced by EDWARD J. BALDES). *Mayo Fndn., Univ. of Minnesota, Rochester.*

542. Measurement of dead space during exercise and at rest. ALLEN C. YOUNG (introduced by H. S. BENNETT). *Dept. of Physiology and Biophysics, Univ. of Washington School of Medicine, Seattle.*

543. Application of infra-red CO_2 analysis to lung compartment estimation. E. S. BROWN (introduced by H. L. WHITE). *Div. of Anesthesiology, Washington Univ. School of Medicine, St. Louis, Mo.*

PAPERS READ BY TITLE

544. A method for producing shock following experimental myocardial infarction in the closed-chest dog. CLARENCE M. AGRESS,* MARVIN J. ROSENBURG,* MAXWELL J. BINDER,* ABRAHAM SCHNEIDERMAN,* HOWARD I. JACOBS* AND WM. G. CLARK. *Cardiovascular Lab., Veterans Administration Center, Los Angeles, Calif.*

545. Response of rat temperature and respiratory rate to thermal stress, magnesium chloride and tetrazolium salts. SHANNON C. ALLEN AND VICTOR E. HALL. *Dept. of Physiology, Stanford Univ. School of Medicine, Stanford, Calif.*

546. Dilating action of anoxia on pulmonary vessels. D. M. AVIADO, JR., A. CERLETTI,* J. ALANIS,* P. H. BULLE* AND C. F. SCHMIDT. *Lab. of Pharmacology, Univ. of Pennsylvania, Philadelphia.*

547. Fechner's Law as a dose-action law. A. BACHEM. *Dept. of Physiology, Univ. of Illinois, Chicago Professional Colleges, Chicago.*

548. Gas exchange during respiratory arrest with deep O_2 insufflation. A. A. BECHTEL* AND J. C. SCOTT. *Dept. of Physiology, Hahnemann Med. College, Philadelphia, Pa.*

549. Effect of normal and modified bovine serum albumin on β-glucuronidase activity. A. L. BEYLER* AND C. M. SZEGO. *Dept. of Zoology, Univ. of California, Los Angeles.*

550. Action of DDT on blood of chicken. H. BURLINGTON AND V. F. LINDEMAN. *Dept. of Zoology, Syracuse Univ., Syracuse, N. Y.*

551. Protective mechanisms against radiation in biological systems. BERRY CAMPBELL. *Dept. of Anatomy, Univ. of Minnesota Med. School, Minneapolis.*

552. In vitro inactivation of alpha-estradiol. A. CANTAROW, K. E. PASCHKIS, T. L. WILLIAMS* AND W. P. HAVENS, JR.* *Jefferson Med. College, Philadelphia, Pa.*

553. Competitive inhibition of *Cypridina luciferase* by butyl alcohol. AURIN M. CHASE AND ELIZABETH H. BRIGHAM.* *Physiological Labs., Princeton Univ., Princeton, N. J., and the Marine Biological Lab., Woods Hole, Mass.*

554. Antagonistic effects of calcium ions and heparin on gelation phase of blood coagulation. ALFRED L. COPLEY. *New York Med. College, New York City, and Marine Biological Lab., Woods Hole, Mass.*

555. Responses of fetal rat heart to drug administration in the mother. E. L. COREY AND C. R. FRENCH*. *Univ. of Virginia Med. School, Charlottesville.*

556. Effect of ACTH on carbohydrate metabolism in hypophysectomized dogs. R. C. DE BODO, M. KURTZ,* N. LANE* AND S. P. KIANG.*

Dept. of Pharmacology, New York Univ. College of Medicine, New York City.

557. Comparative cardiovascular effects of norepinephrine, *l*-epinephrine, and commercial epinephrine. B. DeBoer and H. E. Ederstrom. *Depts. of Physiology and Pharmacology, St. Louis Univ. School of Medicine, St. Louis, Mo.*

558. Mechanism of renal vascular shunt. E. C. del Pozo, R. Hernandez-Peon,* and C. Guzman F.* *Instituto de Estudios Mexicos y Biologicos. Univ. Nacional de Mexico. Mexico, D. F.*

559. Ascorbic acid and acclimatization to cold in monkeys. Louis-Paul Dugal and Guy Fortier. *Institute de Physiologie, Faculté de Medicine, Université Laval, Quebec City, Canada.*

560. Survival rates in experimental burn shock. Albert Einheber,* Louis P. Munan,* and Chester E. Leese. *Dept. of Physiology, George Washington Univ. School of Medicine, Washington, D. C.*

561. Influence of heart disease on expected overshoot in blood pressure following a valsalva maneuver. E. I. Elisberg, E. Singian and G. Miller (introduced by J. Stamler). *Cardiovascular Dept., Med. Research Inst., Michael Reese Hospital, Chicago, Ill.*

562. Effects of *d*-tubocurarine on blood flow and motility of mammalian intestine. Leonard Elwell* and John W. Bean. *Dept. of Physiology, Univ. of Michigan, Ann Arbor.*

563. Recording seizure occurrence in experimental epilepsy. Carl F. Essig and George L. Barnard (introduced by Wade H. Marshall). *National Inst. of Mental Health, Natl. Insts. of Health, Bethesda, Md.*

564. Consumption of thromboplastin in the blood coagulation process. Silvio Fiala, D. R. Meranze, Karl Roth (introduced by Cecilia Riegel). *Dept. of Research, Albert Einstein Med. Center, Mount Sinai Hosp., Philadelphia, Pa.* (Biochem.)

565. Irreversible shock and myocardial failure developing in dogs following ligation of the inferior vena cava. Andrew O. Fitzmorris and William F. Fritz (introduced by Roger K. McDonald). *Clinic of General Medicine and Experimental Therapeutics, Natl. Heart Inst., and Cardiovascular Clinic, U. S. Public Health Service Hosp., Baltimore, Md.*

566. Body temperature a major factor in drowning survival. Ruth H. Foden,* Fred W. Stemler,* Wm. T. Rockhold* and Wm. A. Heistand. *Lab. of Animal Physiology, Dept. of Biological Sciences, Purdue Univ., Lafayette, Ind.*

567. Mechanism underlying hypercholesteremia after injection of Triton. Meyer Friedman and Sanford O. Byers. *Harold Brunn Inst., Mount Zion Hosp., San Francisco, Calif.*

568. Endocrine influences upon the cytology of rat spleen. George J. Gruhman* and Albert S. Gordon. *Dept. of Biology, Washington Square College of Arts and Science, New York Univ., New York City.*

569. Plasma concentration of ammonia-nitrogen and glutamine amide-nitrogen of the hepatectamized dog. Edwin E. Gordon,* Smith Freeman and Chester J. Farmer. *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

570. Nature of effect of bicarbonate ion on nerve activity. Leonard Grumbach and Heinrich H. Probst (introduced by Abraham M. Shanes). *Dept. of Physiology, Des Moines Still College of Osteopathy and Surgery, Des Moines, Iowa.*

571. Effect of pressoreceptor reflex and the Cushing reflex on urinary output. Arthur C. Guyton, Leo J. Scanlon and George G. Armstrong. *Dept. of Physiology and Biophysics, Univ. of Mississippi School of Medicine, University.*

572. Effects of ethyl urethane and sodium azide on growth and respiration in *Chilomonas paramecium*. Richard J. Hahn (introduced by Charles G. Wilber). *Univ. of Nebraska, Lincoln.*

573. Diurnal variations in amount of electroencephalographic paroxysmal discharge and the diurnal eosinophil rhythm of epileptics on days with clinical seizures. F. Halberg, R. Engel, E. Halberg and R. J. Gully (introduced by M. B. Visscher). *State Hosp., Cambridge, Minn., and Dept. of Physiology, Univ. of Minnesota, Minneapolis.*

574. Relationships between fever and sweating. James D. Hardy. *Harrison Dept. of Surgical Research and Surgical Services of the Univ. Hosp., Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

575. Effects of preliminary renal ischemia on experimental renal hypertension. Edward W. Hawthorne* and George E. Wakerlin. *Dept. of Physiology, Univ. of Illinois College of Medicine, Chicago.*

576. Salivary electrolyte excretion in man. J. H. Holmes and A. V. Montgomery.* *Depts. of Medicine and Physiology, Univ. of Colorado School of Medicine, Research Lab., Denver VA Hospital, Denver.*

577. Effect of CO_2 on analeptic action of Amphetamine. D. E. Hutcheon, (introduced by L. B. Jaques.) *Dept. of Physiology, Univ. of Saskatchewan, Saskatchewan, Canada.*

578. Blood sugar levels and hypoxia. HOWARD A. JEWELL (introduced by HARRY A. CHARIPPER). *New York Univ. Graduate School of Arts and Science, New York City.*

579. Absence of immediate effects of x-radiation on gastric secretion. HERBERT D. KERMAN,* T. P. DE GRAFFENRIED II,* F. J. BAJANDAS,* F. E. COY, JR.* AND W. S. REHM. *Depts. of Radiology and Physiology, Univ. of Louisville School of Medicine, Louisville.*

580. Effect of ovariectomy and of certain sex hormones on islet weight. ESME H. KERR* AND R. E. HAIST. *Dept. of Physiology, Univ. of Toronto, Toronto, Canada.*

581. Spinal pain conduction by chains of short neurons. M. KLETZKIN* AND E. A. SPIEGEL. *Dept. of Experimental Neurology, Temple Univ. School of Medicine, Philadelphia, Pa.*

582. Role of adrenal glands in plasma and urinary electrolyte changes during moderate and severe anoxia. R. F. KLINE. *Dept. of Physiology, Univ. of Maryland School of Medicine, Baltimore.*

583. Carbon dioxide pressures in alveoli during respiratory cycle. HUGO KRUEGER. *Oregon State College, Corvallis.*

584. Motoneurone excitability in man following afferent nerve volleys—intact subjects and patients with upper motor neurone lesions. HELEN W. LANGUTH,* ROBERT D. TEASDALL* AND J. W. MAGLADERY. *Subdept. of Neurological Medicine, Johns Hopkins and Baltimore City Hosps., Baltimore.*

585. Experimental studies about pathology of spinal fluid from hypertensive patients. ALFRED LEIMDORFER. *Dept. of Pharmacology, Loyola Univ., Chicago, Ill.*

586. Effect of oxypolygelatin on hemoglobin excretion in the rat. RICHARD W. LIPPMAN, HELEN U. MARTI* AND JEAN OLIVER. *Inst. for Med. Research, Cedars of Lebanon Hosp., Los Angeles, Calif., and the Hoagland Lab., Dept. of Pathology, College of Medicine, State Univ. Med. Center, New York City.*

587. Effect of increasing right ventricular load on isolated left ventricle. ROBERT C. LITTLE, A. O. FITZMORRIS* AND JOHN F. BLANKENSHIP.* *Dept. of Physiology, Univ. of Tennessee, Memphis.*

588. A plant physiological test for syphilis. DAVID I. MACHT. *Dept. of Pharmacology, Sinai Hosp., Baltimore, Md.*

589. Functional recovery following spinal cord hemisection and intrathecal use of hypochlorite treated trypsin. THOMAS P. MAGENIS,* L. W. FREEMAN AND DONALD E. BOWMAN. *Indiana Univ. Med. Center, Indianapolis, Ind.*

590. Nucleic acid content of rat testes following various experimental procedures. WILLIAM B. MCENERY* AND WARREN O. NELSON. *State Univ. of Iowa College of Medicine, Iowa City.*

591. Cardiac glycogen in fishes during and following acute anoxia. A. W. MERRICK* AND M. M. ELLIS. *Dept. of Physiology and Pharmacology, Univ. of Missouri Med. School, Columbia.*

592. Effects of mercuric ion on sodium movement through the gills of goldfish. DALLAS K. MEYER. *Dept. of Physiology and Pharmacology, Univ. of Missouri, Columbia.*

593. Cardiovascular effects of serotonin, 5- and 7-hydroxytryptamine and tryptamine. IRVINE H. PAGE. *Research Div., Cleveland Clinic Fndn., and Frank E. Bunts Educational Inst., Cleveland, Ohio.*

594. Crystalloid solutions as plasma volume expanders in hemorrhaged dogs. W. M. PARKINS, J. H. PERLMUTT* AND R. O. STAIT.* *Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

595. Studies with *p*-chloromercuribenzoate and x-radiation in mice. HARVEY M. PATT, SYLVIA MAYER* AND DOUGLAS E. SMITH. *Argonne Natl. Lab., Chicago, Ill.*

596. Glycylglycine as a buffer in adenosinetriphosphatase assay. C. N. PEISS, (introduced by F. E. FRANKE). *Johns Hopkins Univ., Baltimore, Md.*

597. Tests of pulmonary function utilizing recording oximeters. JOHN F. PERKINS, JR., WILLIAM E. ADAMS,* NICHOLAS CHRISTOFF,* ADOLFE FLORES* AND WILLIAM W. WEBBER.* *Depts. of Physiology and Surgery, Univ. of Chicago, Chicago, Ill.*

598. A striking example of temporal summation of stimuli widely separated in time. D. C. PETERS* AND ROBERT GESELL. *Physiology Lab., Univ. of Michigan, Ann Arbor.*

599. Estrogen-induced regression of coronary atherosclerosis in cholesterol-fed chicks. RUTH PICK (introduced by LOUIS N. KATZ). *Cardiovascular Dept., Medical Research Inst., Michael Reese Hospital, Chicago.*

600. Rate of change in concentration of serum magnesium upon cooling and rewarming. WESLEY S. PLATNER. *Dept. of Physiology and Pharmacology, Univ. of Missouri School of Medicine, Columbia.*

601. Strength-duration curves of single muscle fibers. JULIUS PRAGLIN (introduced by C. LADD PROSSER). *Dept. of Physiology, Univ. of Illinois, Urbana.*

602. Pyloric sphincter activity in the normal dog. J. P. QUIGLEY AND HORTENSE LOUCKES.* *Dept. of Physiology, Univ. of Tennessee, Memphis.*

603. Renin and epinephrine responses after severe hemorrhage. G. CARL RAU AND FERRILL A. PURDY.* *Dept. of Physiology and Pharmacology, Univ. of Missouri School of Medicine, Columbia.*

604. Effect of acute vascular occlusion on thoracic duct lymph flow. W. O. REINHARDT AND M. GEISENDORFER.* *Div. of Anatomy, Univ. of California School of Medicine, Berkeley.*

605. Hypervitaminosis A in the dog. KAARE RODAHL (introduced by A. H. LAWTON). *Inst. of Physiology, Oslo Univ., and Arctic Aeromedical Lab., Ladd AFB, Alaska.*

606. Nature of humoral mediator of pressor response to increased intracranial pressure. S. RODBARD, M. REYES* AND H. SAIKI*. *Cardiovascular Dept., Med. Research Inst., Michael Reese Hosp., Chicago, Ill.*

607. Hypercholatemia as a cause of hypercholesteremic states. RAY H. ROSEMAN,* MEYER FRIEDMAN AND SANFORD BYERS. *Harold Brunn Inst., Mount Zion Hosp., San Francisco, Calif.*

608. Latent addition in inexcitable muscle. ALEXANDER SANDOW AND ARTHUR J. KAHN. *Dept. of Biology, Washington Square College of Arts and Sciences, New York Univ., New York City.*

609. Water and sodium distribution studied by simultaneous measurement of D_2O, Na^{24}, and inulin spaces. I. L. SCHWARTZ, A. NELSON, P. WEISZ, M. H. MAXWELL, E. BREED AND L. SILVER. (introduced by LUDWIG W. EICHNA). *Dept. of Physiology, New York Univ. College of Medicine, New York City.*

610. Role of the reticulo-endothelial system in the uptake of plasma phospholipides. M. L. SHORE* AND D. B. ZILVERSMIT. *Div. of Physiology, Univ. of Tennessee, Memphis.*

611. Conduction time in the central nervous system and peripheral nerve excitability in relation to adrenal cortical function. ALAN SLOCOMBE,* HUDSON HOAGLAND AND JULIUS PRAGLIN.* *Worcester Fndn. for Exptl. Biology, Shrewsbury, Mass.*

612. Effect of x-irradiation upon food and water intake and body weight. D. E. SMITH, E. B. TYREE, H. M. PATT AND N. BINK. *Argonne Natl. Lab., Chicago, Ill.*

613. Action of meperidine during labor. FRANKLIN F. SNYDER. *Depts. of Obstetrics and Anatomy, Harvard Univ., Boston, Mass.*

614. Distribution of injected radioactive Menadione. P. F. SOLVONUK,* L. B. JAQUES AND J. W. T. SPINKS.* *Depts. of Physiology and Chemistry, Univ. of Saskatchewan, Saskatchewan, Canada.*

615. Clear phase of superprecipitation reaction. S. S. SPICER. *Natl. Insts. of Health, Bethesda, Md.*

616. Effect of tobacco smoke on spontaneous activity of the white rat. ARTHUR H. STEINHAUS, PAUL SCHULTZ* AND WILLIAM C. WILSON.* *George Williams College, Chicago, Ill.*

617. 'Veriloid' and cevadine on propulsive motility of the small intestine in dogs. J. CLIFFORD STICKNEY, DAVID W. NORTHUP AND EDWARD J. VAN LIERE. *Dept. of Physiology, West Virginia Univ. School of Medicine, Morgantown.*

618. Effect of vitamin B deficiency and of amino acid deficiency on chick liver ascorbic acid. JOSEL SZEPSENWOL, PHYLLIS L. STROBEL* AND MARY HANSON PARTRIDGE. *Dept. of Anatomy and Biochemistry, Emory Univ. School of Medicine, Emory Univ., Georgia.*

619. A comparative study of effect of certain pituitary growth hormone preparations on ketogenesis by liver slices in vitro. JAY TEPPERMAN, HELEN M. TEPPERMAN* AND JANET M. DE WITT.* *Dept. of Pharmacology, New York State College of Medicine, Syracuse.*

620. Effect of Thyroxine on the thyroid. LESTER VAN MIDDLESWORTH. *Div. of Physiology, Univ., of Tennessee, Memphis.*

621. The menstrual cycle after androgen treatment. G. VAN WAGENEN. *Dept. of Obstetrics and Gynecology, Yale Univ. School of Medicine, New Haven, Conn.*

622. Myocardial lesions in mice fed a yeast-protein diet. W. LANE WILLIAMS AND RICHARD B. ARONSOHN.* *Dept. of Anatomy, Univ. of Minnesota, Minneapolis, Minn.*

623. Correlatives of urinary salt excretion. A. V. WOLF. *Dept. of Physiology and Pharmacology, Albany Med. College, Albany, N. Y.*

AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS

Forty-third Annual Meeting

New York City, April 14–18, 1952

(An asterisk following an author's name indicates "by invitation")*

Tuesday Morning, April 15, 9:00 a.m.

Protein Chemistry I

TUESDAY, 9:00 A.M.—STATLER, PENN TOP NORTH—CENTER

Chairman: H. Neurath

624. Effects of chemical sterilizing agents on serum albumin. MARSHALL E. DEUTSCH (introduced by GEORGE H. MANGUN). *Henry Ford Hosp., Detroit, Mich.*

625. Denaturation of bovine serum albumin. MILTON LEVY AND ROBERT C. WARNER. *Dept. of Chemistry, New York Univ. College of Medicine, New York City.*

626. Interaction of salts with protein crystals. M. L. GROVES,* N. J. HIPP* AND T. L. MCMEEKIN. *Eastern Regional Research Lab., Philadelphia, Pa.*

627. Reversible binding of iodine by soluble proteins. R. KEITH CANNAN. *Dept. of Chemistry, New York Univ. College of Medicine, New York City.*

628. Two-dimensional paper chromatography of proteins. HENRY TAUBER AND EDWARD L. PETIT.* *Venereal Disease Exptl. Lab., Univ. of North Carolina, Chapel Hill.*

629. Polarographic differentiation of various plasma albumins. OTTO H. MÜLLER, LESTER H. GERSHENFELD* AND MARY JANE ELWOOD.* *Dept. of Physiology, State Univ. of New York Med. Center, Syracuse.* (Physiol.)

630. Determination of the amino acid sequence of proteins. HEINZ FRAENKEL-CONRAT AND JANE FRAENKEL-CONRAT.* *Carlsberg Laboratorium, Copenhagen, Denmark.*

631. Identification of glycyl-alanyl-glycine in silk hydrolysates. E. SLOBODIAN* AND M. LEVY. *Dept. of Chemistry, New York Univ. College of Medicine, New York City.*

632. The linkage of cystine in proteins. FELIX HAUROWITZ AND MARGARET KENNEDY.* *Dept. of Chemistry, Indiana Univ., Bloomington.*

633. Imidazole complexes with copper and zinc ions. F. R. N. GURD,* J. T. EDSALL, G. FELSENFELD* AND D. S. GOODMAN.* *Univ. Lab. of Physical Chemistry Related to Medicine and Public Health, Harvard Univ., Boston, Mass.*

634. Rotor temperature measurement and control in the ultracentrifuge. DAVID F. WAUGH AND DAVID A. YPHANTIS.* *Biology Dept., Massachusetts Inst. of Technology, Cambridge.* (Physiol.)

635. Influence of protein concentration upon electrophoretic mobility of serum proteins. RICHARD W. LIPPMAN AND JAY BANOVITZ (introduced by ERWIN HAAS). *Inst. for Med. Research, Cedars of Lebanon Hosp., Los Angeles, Calif., and Gates and Crellin Labs. of Chemistry, California Inst. of Technology, Pasadena.*

Cholesterol and Phospholipids

TUESDAY 9:00 A.M.—STATLER, PENN TOP SOUTH

Chairman: E. W. McHenry

636. Chemical partition of dog red cell stroma. G. H. TISHKOFF, F. S. ROBSCHEIT-ROBBINS AND G. H. WHIPPLE (introduced by FRANCES L. HAVEN). *Dept. of Pathology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

637. Effect of erythrocyte cholesterol on resistance to lysis by saponin. CURTIS N. SANDAGE AND YAYE FURUTANI (introduced by

C. C. WANG). *Bacteriology Research Unit, Hines Hosp., Hines, Ill.*

638. Studies on Δ-7 cholestenol in skin. W. L. MILLER, JR.* AND C. A. BAUMANN. *Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

639. Microbiological degradation of cholesterol. THRESSA C. STADTMAN AND AMELIA CHERKES (introduced by CHRISTIAN B. ANFINSEN). *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

640. Identification of products of lecithin hydrolysis by paper chromatography. DORIS H. CLOUET (introduced by NORMAN S. OLSEN). *Research Lab., Thayer Veterans Administration Hosp. and Biochemistry Dept., Vanderbilt Univ. Nashville, Tenn.*

641. Identification of phosphate esters in tissues by paper chromatography. GEORGE ROUSER* AND WILLIAM F. NEUMAN. *Depts. of Biochemistry and Radiation Biology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

642. Isolation of a polyglycerol phosphatide from dog liver. JOHN M. MCKIBBIN AND WANDA E. TAYLOR.* *Dept. of Biochemistry, State Univ. of New York Med. Center, Syracuse.*

643. Effect of protein depletion on the synthesis of phospholipids, nucleic acids and phosphoprotein in particulate matter of rat liver. S. A. SINGAL, S. J. HAZAN,* V. P. SYDENSTRICKER* AND JULIA M. LITTLEJOHN.* *Depts. of Biochemistry and Medicine, Med. College of Georgia, Augusta.*

644. Synthesis of phospholipids in isolated mitochondria. EUGENE P. KENNEDY (introduced by ALBERT L. LEHNINGER). *Ben May Lab. for Cancer Research and Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

645. Incorporation of labeled dimethylethanolamine in phospholipides of isolated liver tissue. MARIETTA CROWDER* AND CAMILLO ARTOM. *Dept. of Biochemistry, Bowman Gray School of Medicine, Winston-Salem, N. C.*

646. Enzymatic synthesis of phospholipides. ARTHUR KORNBERG AND W. E. PRICER, JR.* *Natl. Inst. of Health, Bethesda, Md.*

One-Carbon Metabolism

TUESDAY, 9:00 A.M.—STATLER, SKY TOP

Chairman: D. W. Wilson

647. Formate production in the intact rat. BERNICE FRIEDMANN* AND SIDNEY WEINHOUSE. *Lankenau Hosp. Research Inst. and Inst. for Cancer Research, Philadelphia, Pa.*

648. Some aspects of the mechanism of formation of methyl groups from serine. DAVID ELWYN (introduced by DAVID B. SPRINSON). *Dept. of Biochemistry, Columbia Univ., New York City.*

649. Formation of formaldehyde in the biological oxidation of dimethylaminoethanol, dimethylglycine, sarcosine and methanol. COSMO G. MACKENZIE, JOHN M. JOHNSTON* AND WILHELM R. FRISELL.* *Dept. of Biochemistry, Univ. of Colorado Med. School, Denver.*

650. Activation of creatine synthesis in homogenates of rat liver by folic and glutamic acids. STANLEY COHEN (introduced by FLORIAN CAJORI). *Dept. of Pediatrics, Univ. of Colorado School of Medicine, Denver.*

651. Utilization of methionine-CH_3-C^{14}, glycine-2-C^{14}, serine-3-C^{14}, and formate-C^{14} for the synthesis of choline and creatine by chicks, weanling rats, and mice. JAKOB A. STEKOL, SIDNEY WEISS,* BETTY HSU* AND PHYLLIS SMITH.* *Lankenau Hosp. Research Inst. and Inst. for Cancer Research, Philadelphia, Pa.*

652. Methionine formation in liver homogenates. H. LANGEMANN* AND C. J. KENSLER. *Dept. of Pharmacology, Cornell Univ. Med. College, New York City.* (Pharmacol.)

653. A methyl donor formed enzymatically from L-methionine and adenosinetriphosphate. G. L. CANTONI. *Dept. of Pharmacology Western Reserve Univ., School of Medicine, Cleveland, Ohio.* (Pharmacol.)

654. Some aspects of the metabolism of methionine. E. S. CANELLAKIS (introduced by HAROLD TARVER). *Div. of Biochemistry, Univ. of California, Berkeley.*

655. Synthesis of methionine in cell free extracts. PAUL BERG (introduced by CHARLES E. CARTER). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

656. Histidine synthesis in yeast and human liver. LOUIS LEVY AND MINOR J. COON (introduced by D. WRIGHT WILSON). *Dept. of Physiological Chemistry, Univ. of Pennsylvania School of Medicine, Philadelphia.*

657. L-Histidine-2-C^{14}, a source of labile methyl groups with transmethylation enhanced by choline deficiency. MILTON TOPOREK (introduced by LEON L. MILLER). *Depts. of Radiation Biology and Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

Nutrition—Growth Factors, Vitamin B_{12}

TUESDAY, 9:00 A.M.—NEW YORKER, GRAND BALLROOM

Chairman: K. Folkers

658. Observations concerning growth factors required by the Donovan body (*D. granulomatis*). W. KNOWLTON HALL AND ROBERT B. DIENST.* *Depts. of Biochemistry and Microbiology, Med. College of Georgia, Augusta.*

659. Glucuronic acid lactone, a growth factor in rats. WILLIAM B. DEICHMANN, JOHN J. CLEMMER AND CHARLES DOWNING. *Dept. of Physiology and Pharmacology, Albany Med. College, Albany, N. Y.* (Pharmacol.)

660. Isolation of protogen. E. L. R. STOKSTAD AND J. V. PIERCE.* *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

661. The chemical properties of protogen. ERNEST L. PATTERSON AND JOHN A. BROCKMAN, JR. (introduced by T. H. JUKES). *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

662. Nature of multiple forms of lipoic acid. LESTER J. REED (introduced by ROGER J. WILLIAMS). *Dept. of Chemistry, Univ. of Texas, Austin.*

663. Factors affecting the synthesis of certain members of the vitamin B-complex in an artificial rumen. CHARLES H. HUNT, O. G. BENTLEY AND T. HERSHBERGER (introduced by A. L. MOXON). *Dept. of Animal Science, Ohio Agricultural Experiment Station, Wooster.*

664. Relation of dietary protein to the signs of choline deficiency—the effect of supplements of vitamin B_{12} and folic acid. MARIA A. FISCHER AND GLADYS D. HALL (introduced by WILLIAM S. MCELLROY). *Dept. of Physiological Chemistry, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

665. Citrovorum factor deficiency in rats and the influence of antibiotics on growth. HARRY A. WAISMAN, JOAQUIN CRAVIOTO-M.* AND HENRY G. PONCHER.* *Dept. of Pediatrics, Univ. of Illinois College of Medicine, Chicago.*

666. Assay for intrinsic factor in patients with pernicious anemia in remission given radioactive vitamin B_{12}. A. D. WELCH, V. SCHARF,* R. W. HEINLE AND G. C. MEACHAM.* *Depts. of Pharmacology and Medicine, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

667. Evidence for the existence of an apoerythein precursor in gastric mucosa. ERNEST BEERSTECHER, JR. AND ELEANOR J. EDMONDS.* *Dept. of Biochemistry, Univ. of Texas School of Dentistry, Houston.*

668. Treatment of granulocytopenia in folic acid-deficient rats with adenine. FLOYD S. DAFT. *Natl. Inst. of Arthritis and Metabolic Diseases, Natl. Insts. of Health, Bethesda, Md.*

669. Metabolic role of vitamin B_{12}. C. T. LING* AND BACON F. CHOW. *Dept. of Biochemistry, School of Hygiene and Public Health, Johns Hopkins Univ., Baltimore, Md.*

Biochemistry of Growth and Tumors

TUESDAY, 9:00 A.M.—NEW YORKER, PARLOR F-G

Chairman: J. P. Greenstein

670. Incorporation of formaldehyde into phosphorylated sugars. FRIXOS CHARALAMPOUS (introduced by CHARLES HEIDELBERGER). *McArdle Memorial Lab., Univ. of Wisconsin Med. School, Madison.*

671. Metabolism of fetal tissues *in vitro*. CLAUDE A. VILLEE. *Depts. of Biological Chemistry and Obstetrics, Harvard Med. School, Boston, Mass.*

672. Adaptive enzyme formation in the chick embryo. MALCOLM W. GORDON (introduced by PHILIP P. COHEN). *Dept. of Physiological Chemistry, Univ. of Wisconsin, Madison.*

673. Nucleotide content of cellular components from human fetal liver. PETER S. OLMSTED (introduced by CLAUDE A. VILLEE). *Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

674. Distribution of cyanide-sensitive alkaline phosphatase activity in normal and regenerating rat liver. OTTO ROSENTHAL, BEATRICE G. NOVACK* AND JUNE W. BRODIE.* *Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

675. Metabolic alteration of 4-amino-5-imidazolecarboxamide in tumor-bearing rice. GAYLORD M. CONZELMAN, JR.,* H. GEORGE MANDEL* AND PAUL K. SMITH. *Dept. of Pharmacology, George Washington Univ. School of Medicine, Washington, D. C.*

676. Chemical changes in normal and neoplastic growth. M. E. LOMBARDO,* D. V. N. REDDY,* P. MCCARTHY,* E. SINGER* AND L. R. CERECEDO. *Dept. of Biochemistry, Fordham Univ., New York City.*

677. Concentrative uptake of amino acids by the Ehrlich mouse-ascites carcinoma cell. T. R. RIGGS,* H. FISCHER,* I. M. PALATINE,* G. S. WELL* AND H. N. CHRISTENSEN. *Tufts College Med. School, Boston, Mass.*

678. Intracellular distribution of radioactivity in nucleic acid nucleotides and proteins following simultaneous administration of P^{32} and glycine-2-C^{14}. EVELYN P. TYNER,* CHARLES HEIDELBERGER AND G. A. LE-

PAGE. *McArdle Memorial Lab., Univ. of Wisconsin, Madison.*

679. Catabolism of malononitriles in normal and tumor-bearing animals. EMERY M. GEL,* FONG-HAN FUNG* AND DAVID M. GREENBERG. *Div. of Biochemistry, Univ. of California School of Medicine, Berkeley.*

680. Metabolism of 2-aminofluorene in the rat. HELMUT R. GUTMANN, GLADYS E. KIELY AND MICHAEL KLEIN (introduced by JOHN L. WOOD). *Cancer Research Lab., Univ. of Florida, Gainesville.*

Enzymes—General

TUESDAY, 9:00 A.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: J. B. Sumner

681. Retention of configuration and the mechanism of enzyme action. DANIEL E. KOSHLAND, JR. (introduced by D. D. VAN SLYKE). *Biology Dept., Brookhaven Natl. Lab., Upton, N. Y.*

682. β-Glucuronidase of calf liver. PETER BERNFELD,* JEROME S. NISSELBAUM* AND WILLIAM H. FISHMAN. *Cancer Research and Cancer Control Unit, Tufts College Med. School, Boston, Mass.*

683. Further studies of bacterial β-glucuronidase. MILES L. DOYLE* AND PHILIP A. KATZMAN. *Dept. of Biochemistry, St. Louis Univ. School of Medicine, St. Louis, Mo.*

684. Enzymic and chemical homogeneity of Schardinger dextrinogenase. SIGMUND SCHWIMMER. *Enzyme Research Div., Bureau of Agricultural and Industrial Chemistry, U. S. Dept. of Agriculture, Albany, Calif.*

685. Enzymatic synthesis of glutamine. WILLIAM H. ELLIOTT (introduced by FRITZ LIPMANN). *Biochemical Research Lab., Massachusetts General Hosp., and Dept of Biological Chemistry, Harvard Med. School, Boston, Mass.*

686. Mammalian glutamotransferase. ABEL LAJTHA AND PAULA SCHWERIN (introduced by H. WAELSCH). *New York State Psychiatric Inst. and Dept. of Biochemistry, Columbia Univ., New York City.*

687. Enzymatic synthesis of glutathione. S. YANARI,* J. SNOKE* AND K. BLOCH. *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

688. *Cypridina* luciferin. H. S. MASON. *Dept. of Biology, Princeton Univ., Princeton, N. J.*

689. Immobilization of ATP in the bioluminescent reaction. WILLIAM D. MCELROY AND JANE COULOMBRE.* *McCollum-Pratt Inst. Johns Hopkins Univ., Baltimore, Md.*

690. Firefly luminescence in the study of biological energy transfer systems. B. L. STREHLER AND J. R. TOTTER (introduced by WALDO E. COHN). *Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn., and Biochemistry Dept., Univ. of Arkansas, Little Rock.*

691. Formaldehyde-pyruvic acid carboligase. HELEN H. HIFT (introduced by R. MCGILVERY). *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

Carbohydrate Chemistry and Metabolism

TUESDAY, 9:00 A.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: S. P. Colowick

692. The nonenzymatic oxidation of α-ketoglutarate. GEORGE KALNITSKY. *Dept. of Biochemistry, State Univ. of Iowa, Iowa City.*

693. Determination of fructose in the presence of glucose in blood and urine by use of diphenylamine. A. B. KENDRICK (introduced by MARTIN E. HANKE). *Dept. of Medicine, Univ. of Illinois, Chicago.*

694. Glucose oxidase in the determination of glucose in biological material. WILLIAM S. BECK (introduced by SIDNEY ROBERTS). *School of Medicine, Univ. of California, Los Angeles.*

695. *In vivo* synthesis of ribose studied with radioactive carbon. I. A. BERNSTEIN (introduced by J. A. MUNTZ). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

696. Enzymatic breakdown of pentose phosphate. B. L. HORECKER AND P. Z. SMYRNIOTIS.* *Natl. Institutes of Health, Bethesda, Md.*

697. Metabolism of ribose-5-phosphate and ribulose-5-phosphate. G. DE LA HABA* AND E. RACKER. *Dept. of Microbiology, New York Univ. College of Medicine, New York City.*

698. Conversion of 1-C^{14}-mannose and 1-C^{14}-glucose to glycogen in the intact rat. MARGARET COOK (introduced by ERNEST B. BUEDING). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

699. Action of the branching enzyme from liver on the outer chains of polysaccharides. JOSEPH LARNER (introduced by GERTY T. CORI). *Dept. of Biochemistry, Washington Univ. Med. School, St. Louis, Mo.*

700. Transfructosidase, a fructosyl-transferring enzyme of *Aspergillus oryzae*. JOHN H. PAZUR (introduced by OTTO A. BESSEY). *Dept. of Biological Chemistry, Univ. of Illinois College of Medicine, Chicago.*

Tuesday Afternoon, April 15, 1:15 p.m.

Protein Chemistry II

TUESDAY, 1:15 P.M.—STATLER, PENN TOP SOUTH

Chairman: T. McMeekin

701. Insulin fibril formation: Application to the isolation of S-35 labeled insulin. C. W. PETTINGA AND C. N. RICE (introduced by O. K. BEHRENS). *Lilly Research Labs., Indianapolis Ind.*

702. Observations with isotopically labeled insulin. WILLIAM C. STADIE AND NIELS HAUGAARD.* *Univ. of Pennsylvania, Philadelphia.*

703. Polymerization of actin. W. F. H. M. MOMMAERTS. *Dept. of Biochemistry, Duke Univ. School of Medicine, Durham, N. C.*

704. Myosin preparations from the rabbit, rat, and mouse. GAIL LORENZ MILLER, RICHARD H. GOLDER,* EDWARD S. EITELMAN* AND ELIZABETH ESHELMAN MILLER.* *Inst. for Cancer Research and Lankenau Hosp. Research Inst., Philadelphia, Pa.*

705. Cis-trans isomers of vitamin A and retinene in the rhodopsin system. RUTH HUBBARD (introduced by GEORGE WALD). *Biological Labs., Harvard Univ., Cambridge, Mass.*

706. Iodopsin. GEORGE WALD, PAUL K. BROWN* AND PATRICIA H. SMITH.* *Biological Labs., Harvard Univ., Cambridge, Mass.*

707. Chromatographic homogeneity of lysozyme preparations. HARRIS H. TALLAN (introduced by WILLIAM H. STEIN). *Labs. of Rockefeller Inst. for Med. Research, New York City.*

708. Fractionation of pig complement. MYRON A. LEON,* OTTO J. PLESCIA,* MICHAEL HEIDELBERGER AND ROBERT S. GORDON, JR.* *Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, and Presbyterian Hosp., New York City.*

709. Preparation of purified human plasma fibrinogen by a cold ether procedure. LOUIS ROSENFELD* AND GEORGE Y. SHINOWARA. *Depts. of Physiological Chemistry and Pathology, Ohio State Univ., Columbus.*

710. Isolation of a crystalline protein from milk. WILLIAM G. GORDON AND WILLIAM F. SEMMETT.* *Eastern Regional Research Lab., Philadelphia, Pa.*

Carboxylases and Esterases

TUESDAY, 1:15 P.M.—STATLER, SKY TOP

Chairman: W. W. Umbreit

711. Glutamic acid decarboxylase from *E. coli*. VICTOR A. NAJJAR AND JEAN FISHER.* *Dept. of Pediatrics, Johns Hopkins Univ. School of Medicine, Baltimore, Md.*

712. Substrate specificity of bacterial tyrosine decarboxylase and kidney DOPA decarboxylase. THEODORE L. SOURKES AND PETER HENEAGE (introduced by WAYNE W. UMBREIT). *Merck Inst. for Therapeutic Research, Rahway, N. J.*

713. Inhibition of bacterial and brain glutamic acid decarboxylases. EUGENE ROBERTS. *Wernse Lab. of Cancer Research, Washington Univ. School of Medicine, St. Louis, Mo.*

714. Serum tributyrinase III. Effect of pH and ionic strength on enzyme activity. C. ALPER AND P. P. POLAKOFF, JR. (introduced by M. J. BOYD). *Div. of Biological Chemistry, Hahnemann Med. College, Philadelphia, Pa.*

715. Inhibition of bacterial esterase activity by polymyxin B. SIDNEY COHEN, C. V. PURDY AND J. B. KUSHNICK (introduced by M. J. SCHLESINGER). *Dept. of Labs., Beth Israel Hosp., and Dept. of Medicine, Harvard Med. School, Boston, Mass.* (Immunol.)

716. Inhibition of esterase by N-substituted amides. ANDREW J. GLAID* AND G. W. SCHWERT. *Dept. of Biochemistry, Duke Univ. School of Medicine, Durham, N. C.*

717. Effects of *l*-glutamine and methionine sulphoxide on the inhibition of acetylcholine synthesis in brain by ammonium ions. B. M. BRAGANCA AND P. FAULKNER (introduced by J. H. QUASTEL). *Research Inst. Montreal General Hosp., Montreal, Quebec, Canada.*

718. Reaction of diisopropyl gluorophosphate (DFP) with red blood cell cholinesterase. HARRY O. MICHEL. *Enzyme Chemistry Branch, Chemical Corps Med. Labs., Army Chemical Center, Md.*

719. Mechanism of hydrolysis by acetylcholinesterase. IRWIN B. WILSON (introduced by DAVID NACHMANSOHN). *Dept. of Neurology, Columbia Univ. College of Physicians and Surgeons, New York City.*

720. Purification of human red cell acetylcholinesterase. CHARLES A. ZITTLE, EDWARD S. DELLAMONICA* AND JONATHAN H. CUSTER.* *Eastern Regional Research Lab., Philadelphia, Pa.*

Nutrition—General

TUESDAY, 1:15 P.M.—NEW YORKER, GRAND BALLROOM

Chairman: P. L. Harris

721. Effect of flavonoids on the retention of ascorbic acid in rats and mice. WALTER H.

EDDY, BORIS SOKOLOFF,* GEORGE CONE,* JOHN BEAUMONT* AND RITA POWELLA.* *Southern Bio-Research Lab., Florida Southern College, Lakeland.*

722. A photochemical color reaction of biotin with ninhydrin in sulfuric acid. THOMAS R. BLOHM, CAROL M. VOLKMANN (introduced by C. A. HANDLEY). *Dept. of Biochemistry, Univ. of Texas Dental Branch, Houston.* (Pharmacol.)

723. Enzymatic degradation of soluble bound biotin. RICHARD W. THOMA* AND W. H. PETERSON. *Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

724. Bioautographic studies on the *Lactobacillus bulgaricus* factors. JAMES C. VITUCCI,* BRIAN L. HUTCHINGS AND JAMES H. WILLIAMS.* *Lederle Labs., Div., American Cyanamid Co., Pearl River, N. Y.*

725. Further studies on the nicotinic acid metabolite excreted by rats given radioactive nicotinic acid or nicotinamide. PEI-HSING LIN* AND B. CONNOR JOHNSON. *Div. of Animal Nutrition, Univ. of Illinois, Urbana.* (Nutrition).

726. Absorption of vitamin A ester and alcohol in conditions of impaired fat absorption and digestion. MARGARET M. KASER, RICHARD MINTON AND CLARA V. HUSSEY (introduced by ARMAND J. QUICK). *Veterans Administration Center, Wood, and Marquette Univ., Milwaukee, Wisc.*

727. Absence of correlation between vitamin A alcohol in liver and plasma in rats. J. GANGULY,* N. I. KRINSKY* AND HARRY J. DEUEL, JR. *Dept. of Biochemistry, Univ. of Southern California, Los Angeles.*

728. Hypervitaminosis A induced by crystalline vitamin A acetate. STANLEY R. AMES, WILLIAM J. SWANSON,* HUGH A. RISLEY* AND PHILIP L. HARRIS. *Research Labs., Distillation Products Industries, Div. of Eastman Kodak Co., Rochester, N. Y.*

729. Mean serum calcium and phosphorus levels in infants fed formulas containing and not containing vitamin D during the first week of life. JOSEPH B. PINCUS AND ISAAC F. GITTLEMAN (introduced by BENJAMIN KRAMER). *Pediatric Research Labs., Jewish Hosp. of Brooklyn, Brooklyn, N. Y.*

730. Meat feeding and absorption of labeled calcium. BILLY M. HIGHTOWER AND EDWARD F. WILLIAMS, JR. (introduced by DEMPSIE B. MORRISON). *Dept. of Chemistry, Univ. of Tennessee, Memphis.*

731. Bile and the absorption of vitamin K_1. ARMAND J. QUICK AND CLARA B. HUSSEY.* *Dept. of Biochemistry, Marquette Univ. School of Medicine, Milwaukee, Wisc.*

Nutrition—Amino Acids

TUESDAY, 1:15 P.M.—NEW YORKER, PARLOR F-G

Chairman: C. P. Berg

732. Stability of various penicillin salts used for growth promotion in animal feeds. RAYMOND G. ESPOSITO* AND WILLIAM L. WILLIAMS. *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

733. Diurnal trend and variation of urinary creatinine excretion. WILLIAM R. BEST,* W. JAMES KUHL, JR.* AND THEODORE E. FRIEDEMANN. *U. S. Army Med. Nutrition Lab., Chicago, Ill.*

734. Hippuric acid synthesis, plasma glycine level and tissue glutathione concentration in healthy persons under psychological stress. HAROLD PERSKY (introduced by THORFIN R. HOGNESS). *Inst. for Psychosomatic and Psychiatric Research and Training of Michael Reese Hosp., Chicago, Ill.*

735. Metabolism of tryptophan by riboflavin-deficient rats. MERLE MASON (introduced by HOWARD B. LEWIS). *Dept. of Biological Chemistry, Univ. of Michigan Med. School, Ann Arbor.*

736. Effect of 2-aminofluorene on the utilization of S^{35} DL-methionine. A. W. WASE,* J. B. ALLISON AND J. F. MIGLIARESE.* *Bureau of Biological Research, New Brunswick, N. J.*

737. Effects of methionine, ethionine and of certain antibiotics on liver iron. C. A. JOHNSON,* E. R. KIRCH AND O. BERGEIM. *Dept. of Biological Chemistry, College of Medicine, and Dept. of Chemistry, College of Pharmacy, Univ. of Illinois, Chicago, Ill.*

738. Selenium toxicity in rats as influenced by choline, betaine and methionine. KENNETH P. MCCONNELL (introduced by B. M. HENDRIX). *Dept. of Biochemistry and Nutrition, Univ. of Texas Med. Branch, Galveston.*

739. Nitrogen balance and lysine deficiency. JAMES W. BOTHWELL* AND J. N. WILLIAMS, JR. *Dept. of Biochemistry, Univ. of Wisconsin College of Agriculture, Madison.*

740. Amino acid imbalances in the rat. H. E. SAUBERLICH. *Dept. of Animal Husbandry and Nutrition, Alabama Polytechnic Inst., Auburn.*

741. Effect of traces of L-histidine upon the growth of mice fed D-histidine or imidazole-lactic or urocanic acid. D. R. CELANDER* AND CLARENCE P. BERG. *Dept. of Biochemistry State Univ. of Iowa College of Medicine, Iowa City.*

742. Biochemical effects of specific amino acid deficiencies in man. ANTHONY A. ALBANESE AND REGIONALD A. HIGGONS.* *Nutritional*

Research Lab., St. Luke's Hosp., New York City.

Phosphatases, Phosphorylases, and Phosphotransferases

TUESDAY, 1:15 P.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: C. F. Cori

743. Further studies on the purification and properties of the alkaline phosphatase from swine kidneys. JAMES C. MATHIES AND ELEANORE D. GOODMAN (introduced by O. H. GAEBLER). *Edsel B. Ford Inst. for Med. Research, Henry Ford Hosp., Detroit, Mich.*

744. The nonprotein moiety of phosphorylase. MARY V. BUELL. *Dept. of Pharmacology, Washington Univ. School of Medicine, St. Louis, Mo.*

745. Enzymatic phosphorolysis of maltose with the production of β-D-glucose-1-phosphate. CHARLOTTE FITTING* AND MICHAEL DOUDOROFF. *Dept. of Bacteriology, Univ. of California, Berkeley.*

746. Inhibitors and activators for ribonuclease and desoxyribonuclease. JAY S. ROTH (introduced by J. S. HEPBURN). *Div. of Biological Chemistry, Hahnemann Med. College, Philadelphia, Pa.*

747. Spleen DPNase and the mechanism of the inhibition by nicotinamide. LEONARD J. ZATMAN (introduced by SIDNEY P. COLOWICK). *McCollum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md.*

748. Gluconate phosphorylation in yeast extracts. ARMAND J. GUARINO (introduced by H. N. CHRISTENSEN). *Dept. of Biochemistry and Nutrition, Tufts College Med. School, Boston, Mass.*

749. Enzymatic phosphorylation of pyridoxal. JERARD HURWITZ (introduced by T. P. SINGER). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

750. Enzymatic phosphorylation of riboflavin to flavin mononucleotide in animal tissues. SASHA ENGLARD (introduced by MERTON F. UTTER). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

751. An insoluble hexokinase from calf brain cortex. ROBERT K. CRANE AND A. SOLS (introduced by EARL W. SUTHERLAND). *Dept. of Biochemistry, Washington Univ. School of Medicine, St. Louis, Mo.*

752. Partial purification and properties of brain phosphofructokinase. J. A. MUNTZ. *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

Nucleotides and Nucleosides—Chemistry and Metabolism

TUESDAY, 1:15 P.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: G. Schmidt

753. Kinetics of acid hydrolysis of pentose nucleic acid derivatives. ODDVAR NYGAARD* AND CYRUS P. BARNUM. *Dept. of Physiological Chemistry, Univ. of Minnesota Med. School, Minneapolis.*

754. Nature of the isomerism in ribonucleotides. HENRY Z. SABLE (introduced by GERHARD SCHMIDT). *Dept. of Biochemistry and Nutrition, Tufts College Med. School, Boston, Mass.*

755. Distribution and properties of uric acid riboside. CHARLES E. CARTER AND JOSEPH L. POTTER.* *Dept. of Medicine, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

756. Structure and microbiological activity of some dinucleotides isolated from RNA. R. B. MERRIFIELD* AND D. W. WOOLLEY. *Rockefeller Inst. for Med. Research, New York City.*

757. Enzymatic synthesis of several uncommon ribosides and desoxyribosides. MORRIS FRIEDKIN. *Dept. of Pharmacology, Washington Univ., St. Louis, Mo.*

758. Desoxyribose transfer by nucleosidases of *Escherichia coli*. C. E. HOFFMAN (introduced by J. O. LAMPEN). *Dept. of Microbiology, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

759. Mechanism of nucleoside cleavage in *Lactobacillus pentosus*. J. O. LAMPEN AND T. P. WANG.* *Dept. of Microbiology, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

760. Incorporation of cytidine into nucleic acids. IRWIN A. ROSE* AND B. S. SCHWEIGERT. *Div. of Biochemistry and Nutrition, American Meat Inst. Fndn. and Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

761. Incorporation of radioactive orthophosphate into various nucleotides. F. M. HUENNEKENS, H. R. MAHLER AND E. DIMANT (introduced by HANS NEURATH). *Dept. of Biochemistry, Univ. of Washington, Seattle, and Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

Biochemistry Society Business Meeting

TUESDAY, 4:00 P.M. STATLER, SKY TOP

Joint Session of the Federation

TUESDAY, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Program on page 492

Wednesday Morning, April 16, 9:00 a.m.

Mucopolysaccharides

WEDNESDAY, 9:00 A.M.—STATLER, PENN TOP NORTH—CENTER

Chairman: K. Meyer

762. Molecular weight and viscosity of sodium chondroitin sulfate. MARTIN B. MATHEWS (introduced by ALBERT DORFMAN). *Dept. of Pediatrics, Univ. of Chicago, Chicago, Ill.*

763. Mucopolysaccharides of glycoproteins of human serum. ZACHARIAS DISCHE AND MARTHA OSNOS.* *Dept. of Biochemistry, Columbia Univ. College of Physicians and Surgeons, New York City.*

764. Biosynthesis of hyaluronic acid by *Streptococcus hemolyticus*. SAUL ROSEMAN,* FRANCES E. MOSES,* ROBERT ABELES,* JULIO LUDOWIEG* AND ALBERT DORFMAN. *Depts. of Pediatrics and Biochemistry, Univ. of Chicago, Chicago, Ill.*

765. Enzymatic formation of monosaccharides from hyaluronic acid. ALFRED LINKER* AND KARL MEYER. *Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, and Edward Daniels Faulkner Arthritis Clinic of Presbyterian Hosp., New York City.*

766. A crystalline disaccharide from hyaluronic acid. BERNARD WEISSMANN (introduced by KARL MEYER). *Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, and Edward Daniels Faulkner Arthritis Clinic of Presbyterian Hosp., New York City.*

767. Biosynthesis of capsular streptococcal polysaccharide. YALE J. TOPPER AND MURRAY M. LIPTON (introduced by DEWITT STETTEN, JR.). *Divs. of Nutrition and Physiology, and Applied Immunology, Public Health Research Inst. of the City of New York, Inc., New York City.*

Sex Hormones

WEDNESDAY, 9:00 A.M.—STATLER, PENN TOP SOUTH

Chairman: E. A. Doisy, Sr.

768. Surface film method as a means for steroid estimation. CHIADAO CHEN AND MARGARET J. SULLIVAN (introduced by ALMA HILLER). *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

769. I^{131}-labeled Girard's reagent 'Iodo-P' as a tool in ketosteroid analysis. W. S. RULIFFSON, H. M. LANG AND J. P. HUMMEL (introduced by G. KALNITSKY). *Dept. of Biochemistry, State Univ. of Iowa, Iowa City.*

770. Metabolic studies of radiotestosterone. JAMES ASHMORE* AND EDWARD A. DOISY. *Dept. of Biochemistry, St. Louis Univ. School of Medicine, St. Louis, Mo.*

771. Testosterone production in a normal man. DAVID K. FUKUSHIMA,* KONRAD DOBRINER AND T. F. GALLAGHER. *Sloan-Kettering Inst. for Cancer Research, New York City.*

772. Conversion of epitestosterone to Δ^4-androstene-3,17-dione by rabbit tissues. CHARLES D. KOCHAKIAN, DAN M. NALL* AND NICHOLAS PARENTE.* *Oklahoma Med. Research Inst. and Hosp., Oklahoma City, and Univ. of Rochester, Rochester, N. Y.*

773. Effect of estrogen on renin-substrate (hypertensinogen). O. M. HELMER AND R. S. GRIFFITH.* *Lilly Lab. for Clin. Research, General Hosp. Indianapolis, Ind.*

774. Solubility of estrone in biologic systems. FRITZ BISCHOFF AND ROBERT E. KATHERMAN.* *Santa Barbara Cottage Hosp. Research Inst., Santa Barbara, Calif.*

775. Estrogen metabolism in human pregnancy: a study with the aid of deuterium. W. H. PEARLMAN, M. R. J. PEARLMAN* AND A. E. RAKOFF.* *Depts. of Biochemistry and Obstetrics and Gynecology, Jefferson Med. College, Philadelphia, Pa.*

776. Effect of stilbestrol on the body weight and reproductive organs of the male rat. D. W. SNAIR,* SYBIL E. JAFFRAY,* L. I. PUGSLEY AND L. A. SCHWINGHAMER.* *Food and Drug Lab., Dept. of Natl. Health and Welfare, Ottawa, Canada.*

777. Spectrophotometric estimation of fecal estrogens in pregnant women. BENJAMIN F. STIMMEL. *Rees-Stealy Clinic Research Fndn., San Diego, Calif.*

778. Fluorescence and absorption spectra of steroidal estrogens heated in sulfuric acid. WILSON R. SLAUNWHITE, JR.,* LEWIS L. ENGEL, JESSE F. SCOTT* AND CLAIRE HAM.* *Med. Labs. of Collis P. Huntington Memorial Hosp. at Massachusetts General Hosp., Boston; Dept. of Biological Chemistry, Harvard Med. School, Boston; and Dept. of Biology, Massachusetts Inst. of Technology, Cambridge.*

779. Isolation of progesterone from human placentae. MATTHEW W. NOALL, HILTON A. SALHANICK AND M. X. ZARROW (introduced by MARVIN D. ARMSTRONG). *Dept. of Biological Chemistry, Univ. of Utah School of Medicine, Salt Lake City, and Dept. of Biological Science, Purdue Univ., Lafayette, Ind.*

Porphyrins, Heme, and Hemoglobins

WEDNESDAY, 9:00 A.M.—STATLER, SKY TOP

Chairman: D. L. Drabkin

780. Further studies on the separation of the porphyrins by chromatography. EARL G. LARSEN* AND JAMES M. ORTEN. *Dept. of Physiological Chemistry, Wayne Univ. College of Medicine, Detroit, Mich.*

781. Role of uroporphyrin III as a precursor of protoporphyrin IX. KURT SALOMON, JONAS E. RICHMOND AND KURT I. ALTMAN (introduced by WALTER R. BLOOR). *Depts. of Radiation Biology and Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

782. Heme components of cytochromes of horse meat. S. GRANICK. *Rockefeller Inst. for Med. Research, New York City.*

783. Heme synthesis in non-intact mammalian and avian erythrocytes. IRVING M. LONDON AND MARTHA YAMASAKI (introduced by D. RITTENBERG). *Dept. of Medicine, Columbia Univ. College of Physicians and Surgeons, New York City.*

784. The α-ketoglutarate-succinate reaction; the formation of a succinyl intermediate from succinate. DAVID SHEMIN AND SELMA KUMIN.* *Dept. of Biochemistry, Columbia Univ., New York City.*

785. A comparison of the rates of incorporation of iron and of the α-carbon atom of glycine into hemoglobin. KURT I. ALTMAN,* THOMAS R. NOONAN,* SANFORD C. SPRARAGEN* AND KURT SALOMON (introduced by HENRY A. BLAIR). *Depts. of Radiation Biology and Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.* (Physiol.)

786. Unusual patterns of hemoglobin and stercobilin labeling with glycine 2-C^{14} in splenectomized dogs. DAVID L. DRABKIN, ASHTON GRAYBIEL* AND J. K. COLEHOUR.* *Dept. of Physiological Chemistry, Graduate School of Medicine, Univ. of Pennsylvania, Philadelphia, and U. S. Naval School of Aviation Medicine, Pensacola, Fla.*

787. Sulfhydryl groups and heme-heme interaction in hemoglobin. AUSTEN F. RIGGS (introduced by EDWARD H. FRIEDEN). *Biological Labs., Harvard Univ., Cambridge, Mass.*

788. The free amino groups of human adult hemoglobin. HENRY BROWN (introduced by JOHN G. REINHOLD). *Dept. of Chemistry, Gannon College, Erie, Pa.*

789. Abnormal hemoglobins in hemolytic anemias. HARVEY A. ITANO (introduced by CARL G. NIEMANN). *Gates and Crellin Labs. of Chemistry, California Inst. of Technology, Pasadena.*

790. Cellular microspectroscopy of hemoglobin-derived pigments. ROBERT C. MELLORS. *Memorial Center for Cancer and Allied Diseases, New York City.*

Symposium: Relationships Between Certain B-Vitamins and Purines and Pyrimidines

WEDNESDAY, 9:00 A.M.—NEW YORKER, GRAND BALLROOM

(The Society is indebted to George B. Brown for arranging this Symposium)

Chairman: V. du Vigneaud

791. Folic acid and B_{12} in physiology of the vertebrate. T. H. JUKES. *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

792. Microbiological aspects of B_{12} and folic acid. WILLIAM R. SHIVE. *Univ. of Texas, Austin.*

793. Factors involved in biosynthesis of purine derivatives. G. ROBERT GREENBERG. *Western Reserve Univ., Cleveland, Ohio.*

794. Studies on biosynthesis of purines and pyrimidines. JOHN M. BUCHANAN. *Univ. of Pennsylvania, Philadelphia.*
Concluding remarks: GEORGE BOSWORTH BROWN. *Sloan-Kettering Inst., New York City.*

Photosynthesis and Plant Biochemistry

WEDNESDAY, 9:00 A.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: W. Z. Hassid

795. Photosynthetic conversion of acetone to acetate by *Rhodopsuedomonas gelatinosa*. JACK M. SIEGEL (introduced by PAUL L. DAY). *Dept. of Biochemistry, School of Medicine, and Inst. of Science and Technology, of Arkansas, Little Rock.*

796. The Blackman reaction velocity constant in continuous and intermittent photosynthesis: a re-evaluation of the significance of 0.01 second dark times. DEAN BURK, JEROME CORNFIELD* AND VERNON RILEY.* *Natl. Insts. of Health, Bethesda, Md.*

797. Induction period of photosynthesis in *Chlorella*. RODNEY A. OLSON AND FREDERICK S. BRACKETT (introduced by PAUL D. ALTLAND). *Natl. Insts. of Health, Bethesda, Md.* (Physiol.)

798. Photochemical carbon dioxide fixation by cell-free leaf macerates. E. W. FAGER (introduced by H. GAFFRON). *Inst. of Radiobiology and Biophysics (Fels Fund), Univ. of Chicago, Chicago, Ill.*

799. Phosphorylation coupled to the photochemical reduction of DPN by spinach grana. WOLF VISHNIAC (introduced by S. OCHOA). *Dept. of Pharmacology, New York Univ. College of Medicine, New York City.*

800. Reduction of nitrite and nitrate ions by preparations obtained from higher plants. C. C. DELWICHE (introduced by P. K. STUMPF). *Div. of Plant Biochemistry, Univ. of California, Berkeley.*

801. Metabolism of nitrogenous compounds by sunflower tissue cultures. F. S. EBERTS, JR. AND A. J. RIKER (introduced by R. H BURRIS). *Depts. of Biochemistry and Plant Pathology, Univ. of Wisconsin, Madison.*

802. Formation of glycine and serine in plants from glycolic acid. N. EDWARD TOLBERT AND MARJORIE S. COHAN (introduced by PAUL B. PEARSON). *Bureau of Plant Industry, Soils and Agricultural Engineering, Beltsville, Md.*

803. Effect of copper deficiency on isocitric dehydrogenase activity in tomato leaves. ALVIN NASON (introduced by E. V. MCCOLLUM). *McCollum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md.*

804. Oxidative metabolism of hexose phosphates by higher plants. BERNARD AXELROD AND ROBERT S. BANDURSKI.* *U. S. Dept. of Agriculture, Albany, and Kerckhoff Biological Labs., California Inst. of Technology, Pasadena.*

805. Sugar transformations in leaves of *Canna indica*. W. Z. HASSID AND E. W. PUTNAM.* *Div. of Plant Biochemistry, Univ. of California, Berkeley.*

806. Possible origins of the methoxyl carbon of lignin in barley (*Hordeum vulgare*). RICHARD U. BYERRUM AND JOHN H. FLOKSTRA (introduced by ROBERT M. HERBST). *Kedzie Chem. Lab., Michigan State College, East Lansing.*

Inorganic Metabolism

WEDNESDAY, 9:00 A.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: H. C. Hodge

807. Solubility of carbon monoxide in biological fluids. JULIUS SENDROY, JR. AND HAROLD A. COLLISON.* *Div. of Chemistry, Naval Med. Research Inst., Bethesda, Md.*

808. Individual variations in serum protein bound iodine and in reduced glutathione in bovine blood. H. O. KUNKEL,* KENNETH H. BURNS* AND CARL M. LYMAN. *Texas A. and M. College System, College Station.*

809. Rate of appearance of bound-I^{131} in the blood. CHARLES A. OWEN, JR.* AND MARSCHELLE H. POWER. *Divs. of Clin. Pathology and Biochemistry, Mayo Clinic, Rochester, Minn.*

810. Behavior of the thyroid toward elements of the seventh periodic group. III. Technetium. EMIL J. BAUMANN, NORMA Z. SEARLE,* A. AARON YALOW,* EDWARD SIEGEL* AND S. M. SEIDLIN.* *Montefiore Hosp., New York City.*

811. Modified $SnCl_2$ reduction method for the determination of serum inorganic phosphate. BENJAMIN N. HORWITT (introduced by A. G. C. WHITE). *Dept. of Medicine, Tulane Univ., Alton Ochsner Med. Fndn., New Orleans, La.*

812. Transcapillary movement of sodium and calcium. W. D. ARMSTRONG, JOHN A. JOHNSON.* LEON SINGER* AND ROGER LIENKE.* *Dept. of Physiological Chemistry, Univ. of Minnesota, Minneapolis.*

813. Transport of insoluble matter in nature: dependence upon complex formation. I. MANDL,* A. GRAUER* AND C. NEUBERG. *Dept. of Chemistry, Polytechnic Inst. of Brooklyn, N. Y.*

814. Chemistry of bone formation. The relationship between the composition of inorganic precipitates and their supernatant solutions. RODERICK P. MACDONALD* AND ADRIAN C. KUYPER. *Wayne Univ. College of Medicine, Detroit, Mich.*

815. Histochemical characterization of articular cartilages of poliomyelitis patients. JAMES S. MILES,* LILLIAN EICHELBERGER AND MICHAEL ROMA.* *Dept. of Surgery, Univ. of Chicago, Chicago, Ill.*

816. Change in rat tissue water and chloride content following a thermal burn. JAMES M. WALKER, MARIE T. BARNES, MORTON GLASSMAN, AVIS R. WALKER (introduced by HARRY M. VARS). *Harrison Dept. of Surgical Research, Univ. of Pennsylvania Schools of Medicine, Philadelphia.*

817. Chemical abnormalities in the blood of the immature infant. SAMUEL NATELSON. *Dept. of Biochemistry, Rockford Memorial Hosp., Rockford, Ill.*

Wednesday Afternoon, April 16, 1:15 p.m.

Amino Acid Chemistry and Metabolism

WEDNESDAY, 1:15 P.M.—STATLER, PENN TOP NORTH—CENTER

Chairman: H. B. Vickery

818. Thiocyanate formation from cystine derivatives. JOHN L. WOOD AND SHIRLEY LUCILE COOLEY.* *Univ. of Tennessee, Memphis.*

819. Use of ion exchange columns for the isolation of pure amino acids. C. H. W. HIRS (introduced by STANFORD MOORE). *Labs. of Rockefeller Inst. for Med. Research, New York City.*

820. Isotopic derivative method involving unfractionated mixtures of labeled compounds as indicators: amino acid estimations. ALBERT KESTON AND JOSEPH LASPALLUTO.* *New York Univ. College of Medicine, New York City.*

821. Evaluation of the hypobromite method for the measurement of nonprotein nitrogen. FLORENCE L. JONES, MORRIS GIPPIN AND EMANUEL E. MANDEL (introduced by EVANGELINE PAPAGEORGE). *Communicable Disease Center, Public Health Service, Atlanta, Ga.*

822. Determination of hippuric acid in normal urine—a study in differential extraction. HSIEN WU AND DAISY YEN WU.* *Biochemistry Dept., Univ. of Alabama Med. College and School of Dentistry, Birmingham.*

823. Laboratory synthesis of some mercapturic acids and biological acetylation of the intermediate cysteines. HAROLD D. WEST AND GHARBHARAN R. MATHURA.* *Dept. of Biochemistry, Meharry Med. College, Nashville, Tenn.*

824. Bacterial utilization of benzoyl amino acids and benzoylpeptides. SIDNEY W. FOX AND KENNETH F. ITSCHNER.* *Chem. Lab., Iowa State College, Ames.*

825. Pyruvate and acetate metabolism in bakers' yeast. CHIH H. WANG,* RICHARD C. THOMAS,* ROBERT F. LABBE,* BERT E. CHRISTENSEN* AND VERNON H. CHELDELIN. *Dept. of Chemistry, Oregon State College, Corvallis.*

826. Action of fluoroacetate on serine and glycine metabolism *in vivo*. JORGE AWAPARA. *Univ. of Texas, M. D. Anderson Hosp. for Cancer Research, Houston.*

827. Free amino acids in yeast under various conditions. WILLIAM BAIR AND GEORGE ROUSER (introduced by ROBERT WITTER). *Depts. of Radiation Biology and Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

828. Changes in free amino acids of the brain after hepatectomy. EUNICE V. FLOCK, MELVIN A. BLOCK,* FRANK C. MANN,* JOHN H. GRINDLAY* AND JESSE L. BOLLMAN.* *Mayo Fndn., Rochester, Minn.*

Carbohydrate Metabolism and Hormone Action

WEDNESDAY, 1:15 P.M.—STATLER, PENN TOP SOUTH

Chairman: W. C. Stadie

829. Further observations on potassium and carbohydrate metabolism. A. BAIRD HASTINGS, CHING-TSENG TENG,* FRANCES B. NESBETT* AND ALBERT E. RENOLD.* *Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

830. Action of insulin on the oxidation of glucose and other foods. ARNE N. WICK AND DOUGLAS R. DRURY.* *Scripps Metabolic Clinic, La Jolla, and Univ. of Southern California, Los Angeles.*

831. Effect of acetoacetate on insulin action. MARY E. NAGLER (introduced by H. C. TIDWELL). *Biochemistry Dept., Southwestern Med. School, Dallas, Tex.*

832. Insulin resistance produced by insulin-hypoglycemia. MICHAEL SOMOGYI. *Lab. of Jewish Hosp. of St. Louis, St. Louis, Mo.*

833. Liver and muscle glycogen as influenced by alloxan. OWEN S. CULLIMORE,* PHOEBE J. BRADSHAW,* N. R. BLATHERWICK AND ELIOT F. BEACH. *Biochemical Lab., Metropolitan Life Insurance Co., New York City.*

834. Effect of growth hormone on glucose oxidation. LILLIAN RECANT (introduced by CARL F. CORI). *Dept. of Biochemistry, Washington Univ. School of Medicine, St. Louis, Mo.*

835. Tracer studies on the carbonate pool of dairy cows. MAX KLEIBER. *College of Agriculture, Univ. of California, Davis.* (Physiol.)

One Carbon Metabolism, Folic Acid, B_{12}, Citrovorum

WEDNESDAY, 1:15 P.M.—STATLER, SKY TOP

Chairman: C. A. Elvehjem

836. Enzymatic mechanism of creatine synthesis. PAUL J. VIGNOS, JR.* AND G. L. CANTONI. *Dept. of Pharmacology, Western Reserve Univ. School of Medicine, Cleveland, Ohio* (Pharmacol.)

837. Metabolism of ethanolamine. ARTHUR WEISSBACH (introduced by EDGAR G. MILLER, JR.). *Dept. of Biochemistry, Columbia Univ., New York City.*

838. The choline oxidase system. BARBARA KELLEY (introduced by JOHN R. TOTTER). *Dept. of Biochemistry, Univ. of Arkansas School of Medicine, Little Rock.*

839. Influence of folic acid, thymine and dehydroisoandrosterone acetate on formate C^{14} uptake by *Streptococcus faecalis*. JOHN R. TOTTER. *Dept. of Biochemistry, Univ. of Arkansas School of Medicine, Little Rock.*

840. Involvement of citrovorum factor in the synthesis of histidine in yeast. HARRY P. BROQUIST. *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

841. Role of B_{12} in methionine synthesis in *E. coli* mutant 113-3. JACOB W. DUBNOFF. *California Inst. of Technology, Pasadena.*

842. Enzymatic conversion of folic acid to citrovorum factor. CHARLES A. NICHOL (introduced by ROBERT W. HEINLE). *Dept. of Pharmacology, Western Reserve Univ. School of Medicine, Cleveland, Ohio* (Nutrition).

843. Effect of folic acid and citrovorum factor on N′-methylnicotinamide excretion in the rat. L. S. DIETRICH,* W. J. MONSON* AND C. A. ELVEHJEM. *Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

844. Further characterization of the pseudovitamin B_{12} pigments. J. J. PFIFFNER, H. W. DION* AND D. G. CALKINS.* *Research Labs., Parke, Davis and Co., Detroit, Mich.*

845. Determination of vitamin B_{12} by means of its combination with *L. leichmannii* resting cells. ROBERT L. DAVIS* AND BACON F. CHOW. *Dept. of Biochemistry, School of Hygiene and Public Health, Johns Hopkins Univ., Baltimore, Md.* (Immunol.)

846. Retention of vitamin B_{12} after administration to subjects of different ages. CALVIN A. LANG AND BACON F. CHOW (introduced by ANNA M. BAETJER). *Dept. of Biochemistry, School of Hygiene and Public Health, Johns Hopkins Univ., Baltimore, Md.* (Physiol.)

847. Microbiological assay of vitamin B_{12} in crude materials. H. L. A. TARR. *Pacific Fisheries Exptl. Station, Vancouver, B. C.*

Dehydrogenases

WEDNESDAY, 1:15 P.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: H. A. Lardy

848. Effect of some succinic acid analogues on succinoxidase activity. E. V. DIETRICH,* A. L. FISHER,* J. P. LONG* AND R. M. FEATHERSTONE. *Dept. of Pharmacology, State Univ. of Iowa College of Medicine, Iowa City* (Pharmacol.)

849. *In vitro* oxidation of glycolic acid and glycolaldehyde by liver enzymes. ERNEST KUN. *Dept. of Medicine, Div. of Infectious Disease and Dept. of Biochemistry, Tulane Univ., New Orleans, La.* (Pharmacol.)

850. Preparation, properties, and assay of glucose-6-phosphate dehydrogenase and 6-phosphogluconate dehydrogenase of *E. coli*. D. B. MCNAIR SCOTT* AND SEYMOUR S. COHEN. *Children's Hosp. of Philadelphia and Dept. of Physiological Chemistry, Univ. of Pennsylvania, Philadelphia.*

851. A soluble pyruvate-α-ketobutyrate dehydrogenase system from *Streptococcus faecalis*. M. I. DOLIN* AND I. C. GUNSALUS. *Dept. of Bacteriology, Univ. of Illinois, Urbana.*

852. Microchemical determination of several dehydrogenase enzymes in rabbit brain. JACK L. STROMINGER* AND OLIVER H. LOWRY. *Dept. of Pharmacology, Washington Univ., St. Louis, Mo.*

853. A triphosphopyridine nucleotide specific aldehyde dehydrogenase from yeast. J. E. SEEGMILLER (introduced by B. L. HORECKER). *Natl. Insts. of Health, Bethesda, Md.*

854. Crystalline rat liver lactic dehydrogenase. DAVID M. GIBSON, EDWIN O. DAVISSON AND BIMAL K. BACHHAWAT (introduced by CARL S. VESTLING). *Dept. of Chemistry, Univ. of Illinois, Urbana.*

855. Mechanism of action of 3-phosphoglyceraldehyde dehydrogenase. H. L. SEGAL (introduced by P. D. BOYER). *Div. of Agricultural Biochemistry, Univ. of Minnesota, St. Paul.*

856. Direct enzymic transfer of hydrogen atoms between substrates and DPN. HARVEY F. FISHER,* P. OFNER,* ERIC E. CONN,* BIRGIT VENNESLAND AND F. H. WESTHEIMER.* *Depts. of Biochemistry and Chemistry, Univ. of Chicago, Chicago, Ill.*

Cytochemistry

WEDNESDAY, 1:15 P.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: C. P. Barnum, Jr.

857. Preparation of suspensions of intact liver cells. JOHN PAUL KALTENBACH (introduced by G. A. LEPAGE). *McArdle Memorial Lab., Univ. of Wisconsin, Madison.*

858. Biochemical heterogeneity of the cytoplasmic particles isolated from rat liver homogenate. ALEX B. NOVIKOFF, ESTELLE PODBER, JEAN RYAN AND ELSIE NOE (introduced by HAROLD B. PIERCE). *Depts. of*

Pathology and Biochemistry, Univ. of Vermont College of Medicine, Burlington.

859. Effect of age and adrenalectomy on the *d*-amino acid oxidase activity of rat liver. K. KURIAKI* AND C. J. KENSLER. *Dept. of Pharmacology, Cornell Univ. Med. College, New York City* (Pharmacol.)

860. Isolation of rat liver cell nuclei in gum arabic medium. ALEXANDER L. DOUNCE AND MORTIMER LITT.* *Dept. of Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

861. Fractionation of proteins from chicken erythrocyte nuclei. M. LASKOWSKI AND VIRGINIA KUBACKI ENGBRING.* *Dept. of Biochemistry, Marquette Univ. School of Medicine, Milwaukee, Wisc.*

862. Phosphatases of rat liver nuclei. MARJORIE A. SWANSON AND MARGARET C. MITCHELL.* *Dept. of Biochemistry, Bowman Gray School of Medicine, Winston-Salem, N. C.*

863. Lipoproteins of cellular nuclei. TUNG-YUE WANG,* M. JOSEPH CARVER,* ROBERT H. RAMSEY,* ARNOLD J. FUNCKES* AND LLOYD E. THOMAS. *Dept. of Biochemistry, Univ. of Missouri, Columbia.*

864. Isolation of globulins of cellular nuclei. WILLIAM R. KIRKHAM (introduced by LLOYD E. THOMAS). *Dept. of Biochemistry, Univ. of Missouri, Columbia.*

865. Effects of thioacetamide on the intracellular distribution of protein-nitrogen and pentosenucleic acid in rat liver. ANNA KANE LAIRD (introduced by J. A. MILLER). *McArdle Memorial Lab., Univ. of Wisconsin, Madison.*

866. Incorporation of N^{15} into nuclear proteins of rat liver. H. D. HOBERMAN AND P. H. PERALTA.* *Dept. of Physiological Chemistry, Yale Univ., New Haven, Conn.*

867. Histochemical use of dithizone. HOWARD H. CHAUNCEY AND FABIAN LIONETTI (introduced by BURNHAM S. WALKER). *Dept. of Biochemistry, Boston Univ. School of Medicine, Boston, Mass.*

Thursday Morning, April 17, 9:00 a.m.

Cholesterol and Lipoproteins

THURSDAY, 9:00 A.M.—STATLER, PENN TOP NORTH-CENTER

Chairman: W. R. Bloor

868. Effect of alcohol intoxication on the cholesterol and ascorbic acid content of guinea pig adrenal glands. J. C. FORBES AND G. M. DUNCAN.* *Dept. of Biochemistry, Med. College of Virginia, Richmond.*

869. Cholesterol serum protein relationship. ALFRED E. KOEHLER AND ELSIE HILL.* *Sansum Clinic Research Fndn. and the Santa Barbara Cottage Hosp., Santa Barbara, Calif.*

870. Serum lipoproteins in human atherosclerosis. HUGH M. PRATT (introduced by ELMER H. STOTZ). *Depts. of Medicine and Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

871. Renal effects of prolonged feeding of cholesterol and bile salt in the rat. W. MARX, E. JAMESON,* H. A. EDMONDSON,* L. I. RICE* AND E. RIDENHOUR.* *Dept. of Biochemistry and Nutrition, Univ. of Southern California School of Medicine, Los Angeles.*

872. Human serum lipoprotein functions in starvation lipemia. WILLIAM H. GOLDWATER, J. R. SNAVELY, MALCOLM L. RANDOLPH AND ROY H. TURNER (introduced by WILLIAM B. WENDEL). *Depts. of Medicine and Biophysics, Tulane Univ. School of Medicine, New Orleans, La.*

873. Changes in blood cholesterol and lipoproteins during experimental overnutrition. JOSEPH T. ANDERSON,* ADRIAN LAWLER,* MAX LOWEN* AND ANCEL KEYS. *Lab. of Physiological Hygiene, Univ. of Minneapolis and Mental Health Research Lab., State of Minnesota, Hastings.*

874. Effect on liver lipids and serum cholesterol of various intakes of cholesterol and choline. JESSIE H. RIDOUT,* COLIN C. LUCAS, JEAN M. PATTERSON* AND CHARLES H. BEST. *Banting and Best Dept. of Med. Research, Univ. of Toronto, Toronto, Canada.*

875. Modification of hypercholesteremia by phosphorylated hesperidin. GUSTAV J. MARTIN AND J. M. BEILER.* *Research Labs., Natl. Drug Co., Philadelphia, Pa.*

876. Purification and properties of lipemia clearing factor. RAY K. BROWN, EDWIN BOYLE, JR. AND CHRISTIAN B. ANFINSEN, JR. (introduced by JAMES A. SHANNON). *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.* (Physiol.)

877. Rate of appearance of dietary cholesterol in blood. IRVING WARNER (introduced by R. GORDON GOULD). *Rush Dept. of Biochemistry, Presbyterian Hosp., and Dept. of Biological Chemistry, Univ. of Illinois College of Medicine, Chicago.*

878. Distribution of exogenous cholesterol in the tissues of the rat. ROSLYN B. ALFIN-SLATER AND LESLIE I. RICE (introduced by HARRY J. DEUEL, JR.). *Dept. of Biochemistry and Nutrition, Univ. of Southern California School of Medicine, Los Angeles.*

Fatty Acid Absorption and Oxidation

THURSDAY, 9:00 A.M.—STATLER, PENN TOP SOUTH

Chairman: H. J. Deuel

879. Maintenance on a diet low in fat. GEORGE T. LEWIS, DONALD W. SMITH,* PATRICK V. FERRO* AND JAMES J. GRIFFITTS.* *Med. Research Fndn. of Dade County, Miami, Fla.*

880. Isolation and identification of fatty acids in milligram quantities as hydroxamic derivatives. ALEXANDER GOUREVITCH AND JOSEPH LEIN (introduced by W. W. WESTERFELD). *Dept. of Zoology, Syracuse Univ., Syracuse, N. Y.*

881. Further studies in fat and carbohydrate metabolism using C^{14}-labeled glycerol. L. I. GIDEZ* AND M. L. KARNOVSKY. *Dept. of Biological Chemistry and Biophysical Lab. Harvard Med. School, Boston, Mass.*

882. Effect of methionine and some emulsifiers on fat absorption. H. C. TIDWELL AND MARY E. NAGLER.* *Biochemistry Dept., Southwestern Med. School, Dallas, Tex.*

883. Distribution of C^{14} in the rat after oral administration of a dioleylstearin 1-C^{14}. MARGARET G. MOREHOUSE AND MILLIE THOMPSON (introduced by JOHN W. MEHL). *Dept. of Biochemistry and Nutrition, Univ. of Southern California School of Medicine, Los Angeles.*

884. β-Oxidation of fatty acids by a soluble enzyme system from mitochondria. GEORGE R. DRYSDALE (introduced by HENRY A. LARDY). *Inst. for Enzyme Research and Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

885. Roles of magnesium chloride and pH in the preservation of the fatty acid oxidase activity of mitochondria heated at 30°. ROBERT F. WITTER AND ETHEL NEWCOMB.* *Dept. of Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

886. Conversion of C^{14}-butyrate to acetoacetate by heart muscle. VICTOR LORBER. *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.* (Physiol.)

887. Potassium and effect of pyruvate on fatty acid oxidation *in vitro*. ROBERT P. GEYER, ETHEL C. BOWIE AND JACQUELINE C. BATES (introduced by F. J. STARE). *Dept. of Nutrition, Harvard School of Public Health, and Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

888. Metabolism of isovaleric acid. WARWICK SAKAMI AND JEAN LAFAYE.* *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

889. Metabolism of 1,5-C^{14}-glutaric acid. MORTON ROTHSTEIN (introduced by A. L. DOUNCE). *Dept. of Radiation Biology, Univ. of Rochester School of Medicine, Rochester, N. Y.*

890. Propanediol phosphate in acetone metabolism. HARRY RUDNEY (introduced by WARWICK SAKAMI). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

Oxidative Phosphorylation and ATPase

THURSDAY, 9:00 A.M.—STATLER, SKY TOP

Chairman: F. E. Hunter

891. Influence of cysteine and thyroxine on oxidative phosphorylation. GLADYS FELDOTT* AND HENRY A. LARDY. *Inst. for Enzyme Research and Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

892. Oxidative phosphorylation in spleen mitochondria. RICHARD L. POTTER AND FRANK H. BETHELL (introduced by M. E. SWENDSEID). *Atomic Energy Commission, Biological Effects of Irradiation Lab., Univ. of Michigan, Ann Arbor.*

893. Oxidative phosphorylation with soluble extracts. J. W. LITTLEFIELD AND D. R. SANADI (introduced by M. JOHNSON). *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

894. Occurrence of an acetone-soluble uncoupling agent in rat liver microsomes. BERTON C. PRESSMAN (introduced by M. A. STAHMANN). *Dept. of Biochemistry and Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

895. A study of the in vitro action of aureomycin on oxidative phosphorylation in animal tissues. J. C. VAN METER,* A. SPECTOR,* J. J. OLESON AND J. H. WILLIAMS.* *Lederle Labs. Div., American Cyanamid Co., Pearl River, N.Y.*

896. Development of ATPase activity in mitochondria by agents and procedures which uncouple phosphorylation. F. EDMUND HUNTER, JR. AND SIDNEY SPECTOR.* *Pharmacology Dept., Washington Univ., St. Louis, Mo.*

897. Effect of 2:4-dinitrophenol on the turnover of adenosinetriphosphate. KWAN-HUA LEE* AND JOHN J. EILER. *College of Pharmacy, Univ. of California, San Francisco.*

898. Latent ATP-ase in rat liver mitochondria. VAN R. POTTER AND H. C. SIMONSON.* *McArdle Memorial Lab., Univ. of Wisconsin, Madison.*

899. Enzymatic fractionation of adenosine pyrophosphates in blood. PETER FORIS,* BRUCE MACKLER* AND GEORGE M. GUEST. *Children's Hosp. Research Fndn., Dept. of Pediatrics, Univ. of Cincinnati, Cincinnati, Ohio.*

900. An electrotitrimetric method for measuring the enzymatic hydrolysis of ATP. IRVING GREEN AND ROBERT G. PARRISH (introduced by W. F. H. M. MOMMAERTS). *Dept. of Biochemistry, Duke Univ. School of Medicine, Durham, N. C.*

Nucleic Acids—Chemistry and Structure

THURSDAY 9:00 A.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: E. Chargaff

901. Ten-hour preparation of pure, highly polymerized thymus nucleic acid. NORMAN S. SIMMONS, STELLA CHAVOS AND H. KENNETH ORBACH (introduced by RICHARD F. RILEY). *Atomic Energy Project, Univ. of California School of Medicine, Los Angeles.* (Pharmacol.)

902. Effects of ultraviolet irradiation upon nucleic acids and sodium nucleates. MONA SPIEGEL-ADOLF. *Dept. of Colloid Chemistry, Temple Univ. School of Medicine, Philadelphia, Pa.*

903. Light scattering studies on desoxyribonucleic acid. JOHN W. ROWEN (introduced by LEON A. HEPPEL). *Natl. Insts. of Health, Bethesda, Md.*

904. Products of action of pancreatic desoxyribonuclease. ROBERT L. SINSHEIMER (introduced by FRITZ SCHLENK). *Dept. of Physics, Iowa State College, Ames.*

905. Nature of ribonuclease action. HUBERT S. LORING AND ARTHUR P. RINFRET.* *Stanford Univ., Calif.*

906. Enzymatic degradation products of ribonucleic acid. ELLIOT VOLKIN* AND WALDO E. COHN. *Biology Div., Oak Ridge Natl. Labs., Oak Ridge, Tenn.*

907. Observations supporting a debranching action of ribonuclease on yeast ribonucleic

acid. GERHARD SCHMIDT, MARIA SERAYDARIAN,* KRIKOR SERAYDARIAN AND S. J. THANNHAUSER. *Research Labs., Boston Dispensary, Tufts Med. School, Boston, Mass.*

908. A specific (3-) nucleotidase from barley. LOUIS SHUSTER* AND NATHAN O. KAPLAN. *McCollum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md.*

909. Enzymatic studies on ribonucleic acid as measured by streptolysin formation. LEON A. HEPPEL AND R. J. HILMOE.* *Natl. Insts. of Health, Bethesda, Md.*

910. Poly-ribophosphate, an immunologically active type-specific substance. STEPHEN ZAMENHOF, GRACE LEIDY,* PATRICIA L. FITZGERALD,* HATTIE E. ALEXANDER AND ERWIN CHARGAFF. *Depts. of Biochemistry and Pediatrics, Columbia Univ., New York City.*

911. Interaction of quinacrine with nucleic acids and with their products of depolymerization by alkali and by enzymes. J. LOGAN IRVIN AND ELINOR MOORE IRVIN. *Dept. of Biological Chemistry, Univ. of North Carolina School of Medicine, Chapel Hill.*

Metabolism of Microorganisms

THURSDAY, 9:00 A.M.—MANHATTAN CENTER GOLD ROOM

Chairman: I. C. Gunsalus

912. Oxidative reactions in propionic acid fermentation. S. F. CARSON AND EUGENE A. DELWICHE (introduced by J. W. FOSTER). *Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

913. Formaldehyde metabolism in propionic acid fermentation. FREDRICK W. LEAVER (introduced by HARLAND G. WOOD). *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

914. Fermentation of glucose-3,4-C^{14} and glucose-1-C^{14} by *Propionibacterium arabinosum*. HARLAND G. WOOD AND FREDRICK LEAVER.* *Dept. of Biochemistry, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

915. Acetate oxidation by *Escherichia coli*. H. E. SWIM AND L. O. KRAMPITZ. *Dept. of Microbiology, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

916. Malate system of *Trypanosoma cruzi*. H. D. BAERNSTEIN. *Natl. Insts. of Health, Bethesda, Md.*

917. Metabolism of tartaric acid. THEO. J. WEISS AND PAUL M. RUOFF (introduced by DAN A. RICHERT). *Dept. of Chemistry, Syracuse Univ., Syracuse, N. Y.*

918. Utilization of D-amino acids by *Tetrahymena geleii*. ALFRED M. ELLIOTT, JAMES F. HOGG AND CHUNG WU (introduced by LAWRENCE H. LOUIS). *Depts. of Zoology and Biological Chemistry, Univ. of Michigan, Ann Arbor.*

919. Amino acid composition and nitrogen metabolism of *Tetrahymena geleii*. CHUNG WU AND JAMES F. HOGG (introduced by A. A. CHRISTMAN). *Dept. of Biological Chemistry, Univ. of Michigan, Ann Arbor.*

920. Amino acid economy of a homofermentative organism. GERALD D. SHOCKMAN* AND GERRIT TOENNIES. *Inst. for Cancer Research and Lankenau Hosp. Research Inst., Philadelphia, Pa.*

921. Metabolic relation between methionine and adeninethiomethylriboside (thiomethyladenosine). RAYMOND L. SMITH* AND F. SCHLENK. *Dept. of Bacteriology, Iowa State College, Ames.*

Thursday Afternoon, April 17, 1:15 p.m.

Amino Acid Metabolism

THURSDAY, 1:15 P.M.—STATLER, PENN TOP NORTH-CENTER

Chairman: H. B. Lewis

922. Competitive interactions between isoleucine and valine transamination in *Escherichia coli*. H. EDWIN UMBARGER AND BORIS MAGASANIK (introduced by J. HOWARD MUELLER). *Dept. of Bacteriology and Immunology, Harvard Med. School, Boston, Mass.*

923. Isotopic studies on reaction mechanism and equilibrium in enzymatic decarboxylation of amino acids. RAY KOPPELMAN,* STANLEY MANDELES* AND MARTIN E. HANKE. *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

924. Degradation of arginine by *Clostridium perfringens* (BP6K). GILBERT C. SCHMIDT,* MILAN A. LOGAN AND ALFRED A. TYTELL. *Dept. of Biological Chemistry, Univ. of Cincinnati, Cincinnati, Ohio.*

925. Formation of proline from ornithine, citrulline or arginine. PAUL B. HAMILTON. *Dept. of Biochemistry, Alfred I. duPont Inst. of Nemours Fndn., Wilmington, Del.*

926. Citrulline biosynthesis. SANTIAGO GRISOLIA* AND PHILIP P. COHEN. *Dept. of*

Physiological Chemistry, Univ. of Wisconsin, Madison.

927. Effect of ascorbic acid on oxidation of tyrosine. BERT N. LA DU, JR. (introduced by BERNARD B. BRODIE). *New York Univ. Research Service, Goldwater Memorial Hosp., New York City; and Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

928. Oxidative properties of ascorbic acid. SIDNEY UDENFRIEND, CARROLL T. CLARK,* JULIUS AXELROD* AND BERNARD B. BRODIE. *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

929. Biosynthesis of shikimic acid from labeled compounds. HAROLD SHIGEURA* AND DAVID B. SPRINSON. *Dept. of Biochemistry, Columbia Univ., New York City.*

930. Antagonism between two successive aromatic precursors, shikimic acid and 5-dehydroshikimic acid. BERNARD D. DAVIS. *U. S. Public Health Service Tuberculosis Research Lab., Cornell Univ. Med. College, New York City.* (Immunol.)

931. Urocanic acid as an intermediate in the enzymatic conversion of histidine to glutamic and formic acids. HERBERT TABOR, ALAN H. MEHLER,* OSAMU HAYAISHI* AND JULIUS WHITE.* *Natl. Insts. of Health, Bethesda, Md.* (Pharmacol.)

932. Enzymatic degradation of histidine and urocanic acid by liver and pseudomonas. ALAN H. MEHLER* AND HERBERT TABOR. *Natl. Insts. of Health, Bethesda, Md.* (Pharmacol.)

Adrenal Corticoids and Related Substances

THURSDAY, 1:15 P.M.—STATLER, PENN TOP SOUTH

Chairman: K. Dobriner

933. Dinitrophenylhydrazones of steroid ketones. HANS REICH AND KEITH F. CRANE (introduced by LEO T. SAMUELS). *Dept. of Biochemistry, Univ. of Utah College of Medicine, Salt Lake City.*

934. Synthesis and metabolic studies of 11-dehydrocorticosterone-21-C^{14} and its acetate. ROBERT SUNG-LAN HSIA,* WILLIAM H. ELLIOTT,* E. A. DOISY, JR. AND SIDNEY A. THAYER. *Depts. of Biochemistry and Internal Medicine, St. Louis Univ. School of Medicine, St. Louis, Mo.*

935. Influence of chorionic gonadotrophin on activity of dehydrogenase in testis which converts 3-hydroxysteroids to 3-ketones. MARY L. HELMREICH,* MARY B. LASATER,* AND LEO T. SAMUELS. *Dept. of Biochemistry, Univ. of Utah College of Medicine, Salt Lake City.*

936. Enzymatic conversion of desoxycorticosterone to corticosterone. MIKA HAYANO* AND RALPH I. DORFMAN. *Worcester Fndn. for Exptl. Biology, Shrewsbury, Mass.*

937. Paper partition chromatography of progesterone and related compounds. LEONARD R. AXELROD (introduced by HAROLD C. HODGE). *Dept. of Radiation Biology, Univ. of Rochester School of Medicine, Rochester, N. Y.*

938. Reversed phase paper chromatography of steroids. THEODORE H. KRITCHEVKSY (introduced by KONRAD DOBRINER). *Sloan-Kettering Inst. for Cancer Research, New York City.*

939. Chromatographic separation of adrenal cortical hormones and of related steroids. E. R. KATZENELLEBOGEN,* T. H. KRITCHEVSKY* AND KONRAD DOBRINER. *Sloan-Kettering Inst. for Cancer Research, New York City.*

940. Paper chromatographic separation of C_{19} and C_{21}. KENNETH SAVARD (introduced by RALPH I. DORFMAN). *Worcester Fndn. for Exptl. Biology, Shrewsbury, Mass.*

941. Fractionation of formaldehydeogenic substances in urine extracts. HILDEGARD WILSON (introduced by ISIDOR GREENWALD). *Dept. of Chemistry, New York Univ. College of Medicine, New York City.*

942. Conjugated corticoids. ELEANOR H. VENNING. *McGill Univ. Clinic, Royal Victoria Hosp., Montreal, Canada.*

943. Excretion of formaldehydegenic substances by normal and scorbutic guinea pigs. ELI M. NADEL* AND JOHN J. SCHNEIDER. *Pathology Section, Natl. Cancer Inst., Bethesda, Md. and Dept. of Exptl. Medicine, Jefferson Med. College, Philadelphia, Pa.*

Biochemistry of Microorganisms

THURSDAY, 1:15 P.M.—STATLER, SKY TOP

Chairman: E. E. Snell

944. Factors affecting oxidation of aniline by *Mycobacterium smegmatis*. N. H. SLOANE, M. SAMUELS, C. RITTER, C. CRANE AND R. L. MAYER (introduced by J. J. OLESON). *Lederle Labs. Div., American Cyanamid Co., Pearl River, N.Y., and Ciba Pharmaceutical Products Co., Summit, N. J.*

945. Growth requirements of paramecium arelia, var. 4, stock 51.7 (s) in a medium, free of other living organisms. W. J. VAN WAGTENDONK, C. A. MILLER* AND R. L. CONNER. *Dept. of Zoology, Indiana Univ., Bloomington.*

946. Identification of n-valeric acid as a metabolic product of bacteria-free *Ascaris lumbricoides*. ERNEST BUEDING. *Dept. of Pharmacology, Western Reserve Univ., Cleveland, Ohio.*

947. Toxicity of 0-phenanthroline for bacteria. ROBERT A. MACLEOD (introduced by M. E. SAWYER). *Dept. of Biochemistry, Queen's Univ., Kingston, Canada.* (Physiol.)

948. Inhibition of the growth of *Hemophilus parainfluenzae* by analogues of putrescine. EDWARD J. HERBST, ELEANOR BARTLETT GLINOS AND LAWRENCE H. AMUNDSEN (introduced by E. G. SCHMIDT). *Dept. of Biochemistry, Univ. of Maryland School of Medicine, Baltimore; and Dept. of Chemistry, Univ. of Connecticut, Storrs.*

949. Growth of *Hemophilus pertussis* from ultrasonic extracts of L-forms. RUTH G. WITTLER* AND LOUIS PILLEMER. *Inst. of Pathology, Western Reserve Univ., Cleveland, Ohio.*

950. Separation of a cysteine-activated proteinase from culture filtrates of *Clostridium histolyticum*. IRWIN H. LEPOW, SIDNEY KATZ AND JACK PENSKY (introduced by LOUIS PILLEMER). *Inst. of Pathology, Western Reserve Univ., Cleveland, Ohio.*

951. *Clostridium histolyticum* proteinase. JAMES D. OGLE (introduced by ALFRED A. TYTELL). *Dept. of Biological Chemistry, Univ. of Cincinnati, Cincinnati, Ohio.*

952. Isolation of bacterial pyrogens. DAVID M. TENNENT (introduced by ROBERT H. SILBER). *Merck Inst. for Therapeutic Research, Rahway, N. J.*

953. Quantitative determination of low concentrations of nitrate by enzymatic reduction. W. R. STRAUGHN (introduced by J. LOGAN IRVIN). *Depts. of Bacteriology and Biochemistry, Univ. of North Carolina School of Medicine, Chapel Hill.*

954. An automatic titrating and recording apparatus for microbiological assays. CHARLES H. EADES, JR., B. P. MCKAY AND W. E. ROMANS (introduced by T. P. NASH, JR.). *Dept. of Chemistry, Univ. of Tennessee, Memphis.*

Cytochrome and Related Topics

THURSDAY 1:15 P.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: E. G. Ball

955. Effects of thyroxine on the oxidation of ascorbate and succinate by the cytochrome oxidase system. CHALMERS L. GEMMILL. *Dept. of Pharmacology, Univ. of Virginia Med. School, Charlottesville* (Pharmacol.)

956. Spectrophotometric determination of cytochrome oxidase activity. WALTER J. FRAJOLA* AND CARL S. VESTLING. *Dept. of Chemistry, University of Illinois, Urbana, and Dept. of Physiological Chemistry, Ohio State Univ., Columbus.*

957. Respiratory pigments of metabolising cells. BRITTON CHANCE. *Johnson Research Fndn., Univ. of Pennsylvania, Philadelphia.*

958. Pasteur effect in yeast lacking cytochrome oxidase. OTTO MEYERHOF[1] AND HAROLD M. DAVIDSON.* *Dept. of Physiological Chemistry, Univ. of Pennsylvania School of Medicine, Philadelphia.*

959. Bacterial cytochromes. LUCILE SMITH (introduced by BRITTON CHANCE). *Johnson Research Fndn., Univ. of Pennsylvania, Philadelphia.*

960. Manometric and spectrophotometric studies on cytochrome-b. CARL WIDMER, JR.* AND ELMER STOTZ. *Dept. of Biochemistry, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

961. Electrophoresis of soluble cytochromes. W. W. WAINIO, BERTRAM EICHEL* AND S. J. COOPERSTEIN.* *Bureau of Biological Research, Rutgers Univ., New Brunswick, N. J., and Dept. of Anatomy, Western Reserve Univ. of School of Medicine, Cleveland, Ohio.*

962. Bacterial DPN-cytochrome *c* reductase. ARNOLD F. BRODIE AND JOSEPH S. GOTS (introduced by M. G. SEVAG). *Dept. of Microbiology, Univ. of Pennsylvania School of Medicine, Philadelphia.*

963. Cytochrome *c* reductase (DPN) from heart. HENRY R. MAHLER, LEO P. VERNON AND N. K. SARKAR (introduced by J. L. TEPLY). *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

964. The $Fe^{+++} - Fe^{++}$ change in the coupled oxidation reaction of tryptophan peroxidase. W. E. KNOX. *Harvard Med. School, Boston, Mass.*

[1] Deceased.

Phage; Adaptation; Mutations

THURSDAY 1:15 P.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: E. A. Evans, Jr.

965. Effect of depletion of amino acids on phage production in a lysogenic organism. ERNEST BOREK. *Service of Microbial Physiology, Pasteur Inst., Paris, France.*

966. Host nitrogen as a source for T_7 bacteriophage. E. A. EVANS, JR., FRANK W. PUTNAM AND LUCILE PALM.* *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

967. Origin of phage purines. ARTHUR L. KOCH (introduced by E. A. EVANS, JR.), *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

968. Purine and pyrimidine metabolism of normal and phage-infected *Escherichia coli B*. SAMUEL FRIEDMAN AND JOSEPH S. GOTS (introduced by OTTO ROSENTHAL). *Dept. of Microbiology, Univ. of Pennsylvania Med. School, Philadelphia.*

969. Adaptation of *Achromobacter fischeri* to fructose utilization. STANLEY FRIEDMAN introduced by W. D. MCELROY). *Dept. of Biology, Johns Hopkins Univ., Baltimore, Md.*

970. Adaptive phenomena in a biosynthetic pathway. HENRY J. VOGEL* AND BERNARD D. DAVIS. *U. S. Public Health Service Tuberculosis Research Lab., Cornell Univ. Med. College, New York City.* (Immunol.)

971. Nature of biochemical mutants of *Neurospora crassa* produced by sulfur mustards. CARL M. STEVENS AND AUGUSTA MYLROIE.* *Fulmer Chemical Lab., State College of Washington, Pullman.*

972. Selection of biochemically deficient mutants of *E. coli*. EDWARD A. ADELBERG AND JOHN W. MYERS (introduced by M. DOUDOROFF). *Dept. of Bacteriology, Univ. of California, Berkeley.*

973. Production of an altered pantothenate synthesizing enzyme as a result of mutation. WERNER K. MAAS (introduced by BERNARD D. DAVIS). *U. S. Public Health Service Tuberculosis Research Lab., Cornell Univ. Med. College, New York, City.* (Immunol.)

974. Interrelation of thiamine and pyridoxine in neurospora. DANIEL L. HARRIS (introduced by FRANKLIN C. MCLEAN). *Dept. of Physiology, Univ. of Chicago, Chicago, Ill.*

Biochemistry Society Business Meeting

THURSDAY, 4:00 P.M.—STATLER, SKY TOP

Friday Morning, April 18, 9:00 a.m.

Radiation Effects

FRIDAY 9:00 A.M.—STATLER, PENN TOP NORTH-CENTER

Chairman: A. Hollaender

975. Decrease in the oxygen uptake of duck erythrocytes following whole body x-irradiation. J. RAYMOND KLEIN. *Biology Dept., Brookhaven Natl. Lab., Upton, L. I., N. Y.*

976. Effect of roentgen irradiation on tissue specific cathepsins and their inhibitors. JOHN C. BALLIN* AND ROBERT N. FEINSTEIN. *U. S. Air Force Radiation Lab. and Depts. of Pharmacology and Biochemistry, Univ. of Chicago, Chicago, Ill.*

977. Effects of x-irradiation on activity of tissue transaminases. MYRON BRIN (introduced by RALPH W. MCKEE). *Cancer Research Inst. of the New England Deaconess Hosp., Boston, Mass.*

978. Effects of x-irradiation on liver glycogen and blood sugar. RALPH W. MCKEE. *Cancer Research Inst. of the New England Deaconess Hosp., and Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

979. Electrophoretic studies of proteins of normal and irradiated rabbit lenses. C. ORVIS RUPE (introduced by CHESTER J. FARMER). *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

980. Irradiation-induced destruction of essential fatty acids and other metabolites. JAMES F. MEAD (introduced by WENDELL H. GRIFFITH). *Atomic Energy Project, Univ. of California School of Medicine Los Angeles, Calif.*

981. Effect of x-ray on salt and water balance in the rat. W. O. CASTER (introduced by CYRUS P. BARNUM). *Physiological Chemistry Dept., Univ. of Minnesota, Minneapolis.*

Protein Metabolism

FRIDAY 9:00 A.M.—STATLER, PENN TOP SOUTH

Chairman: C. B. Anfinsen, Jr.

982. Collagen synthesis in tissue cultures. HORACE W. GERARDE AND MARION JONES (introduced by H. A. MATTILL). *Depts. of Biochemistry and Bacteriology, State Univ. of Iowa College of Medicine, Iowa City.*

983. Turnover rate of plasma fibrinogen. ROBERT E. MADDEN* AND R. GORDON GOULD. *Rush Dept. of Biochemistry, Presbyterian Hosp., and Dept. of Biological Chemistry, Univ. of Illinois College of Medicine, Chicago, Ill.*

984. Factors affecting biosynthesis of plasma albumin and globulin fractions as studied with the aid of lysine-ϵ-C^{14} and Histidine-2-C^{14}. LEON L. MILLER AND WILLIAM F. BALE.* *Dept. of Radiation Biology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

985. Evidence for intermediate compounds in biosynthesis of ovalbumin. D. STEINBERG* and C. B. ANFINSEN. *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

986. Amino acid incorporation by liver proteins. J. MURRAY LUCK AND ROBERT BRUNISH.* *Dept. of Chemistry, Stanford Univ., Stanford, Calif.*

987. Endocrine regulation of rate of protein synthesis and size of nitrogen pool. PAUL D. BARTLETT. *Edsel B. Ford Inst. for Med Research, Henry Ford Hosp., Detroit, Mich*

988. Hormonal effects on incorporation of labeled amino acids in tissues of reproductive tract EDWARD H. FRIEDEN, A. C. STEELE* AND M. A. TELFER.* *Biological Labs., Harvard Univ., Boston, Mass.*

989. Activating influence of α-estradiol on the in vitro incorporation of glycine-$2C^{14}$ into surviving rat uteri. GERALD C. MUELLER AND GLENN N. YANAGI (introduced by H. F. DEUTSCH). *McArdle Memorial Lab., Univ. of Wisconsin Med. School, Madison.*

990. Evidence of a non-nucleic acid, protein bound phosphorus with high metabolic activity. R. M. JOHNSON AND S. ALBERT (introduced by A. H. SMITH). *Richard Cohn Radiobiology Laboratory, Detroit Inst. of Cancer Research, Detroit, Mich.*

991. Incorporation of radioactive phosphate into certain protein-bound phosphorus fractions of brain. R. J. ROSSITER, H. A. DELUCA* AND K. P. STRICKLAND.* *Dept. of Biochemistry, Univ. of Western Ontario, London, Canada.*

Coenzyme A

FRIDAY 9:00 A.M.—STATLER, SKY TOP

Chairman: S. Ochoa

992. Further purification and chemistry of coenzyme A. J. D. GREGORY (introduced by G. D. NOVELLI). *Biochemical Research Lab., Massachusetts General Hosp., and Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

993. A convenient method for preparation of coenzyme A. H. BEINERT,* R. VAN KORFF,* D. E. GREEN, D. A. BUYSKE,* R. E. HAND-

SCHUMACHER,* H. HIGGINS* AND F. M. STRONG. *Inst. for Enzyme Research and Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

994. Mechanism of enzymatic synthesis of citric acid. JOSEPH R. STERN,* SEVERO OCHOA AND FEODOR LYNEN.* *Dept. of Pharmacology, New York Univ. College of Medicine, New York City; and Chemical Inst., The University, Munich, Germany.*

995. Mechanism of ATP-acetate reaction. SIMON BLACK, MARY ELLEN JONES,* RUTH M. FLYNN* AND FRITZ LIPMANN. *Biochemical Research Lab., Massachusetts General Hosp. and Dept. of Biological Chemistry, Harvard Med. School, Boston, Mass.*

996. Activation of acetate, acetoacetate and fatty acids in soluble extracts of pig heart. D. E. GREEN, H. BEINERT,* D. GOLDMAN,* R. VAN KORFF* AND S. MII.* *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

997. Role of coenzyme A and DPN in oxidation of α-ketoglutarate. D. R. SANADI AND J. W. LITTLEFIELD (introduced by D. E. GREEN). *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

998. Role of coenzyme A in acetaldehyde oxidation. ROBERT MAIN BURTON (introduced by E. R. STADTMAN). *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

999. Acyl-coenzyme A deacylase. J. GERGELY, M. P. HELE AND C. V. RAMAKRISHNAN (introduced by F. M. STRONG). *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

1000. Reactions of acetyl phosphate catalyzed by 3-phosphoglyceraldehyde dehydrogenase. JANE HARTING* AND SIDNEY VELICK. *Dept. of Biochemistry, Washington Univ., St. Louis, Mo.*

1001. Acyl-coenzyme A synthesis by phosphotransacetylase and coenzyme A-transphorase. E. R. STADTMAN. *Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

Biological Oxidations

FRIDAY 9:00 A.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: K. A. C. Elliott

1002. Competitive inhibition of uricase by xanthine; an assay for xanthine oxidase activity in the presence of uricase by the in vitro production of uric acid. JOHN F. VAN PILSUM (introduced by SHERMAN R. DICKMAN). *Dept. of Biochemistry, Univ. of Utah College of Medicine, Salt Lake City, and Dept. of Biochemistry, Univ. of New York College of Medicine, New York City.*

1003. Inhibition of liver xanthine oxidase induced by chloramphenicol. MARIAN E. SWENDSEID, ANN L. SWANSON* AND FRANK H. BETHELL.* *Thomas Henry Simpson Memorial Inst. for Med. Research, Univ. of Michigan, Ann Arbor.*

1004. Inhibition of xanthine oxidase by ascorbic acid. PHILIP FEIGELSON (introduced by P. ROTHEMUND). *Div. of Biochemistry, Fels Research Inst., Antioch College, Yellow Springs, Ohio.*

1005. 'Activation' of ascorbic acid oxidase by thyroxine and other amino acids. EARL FRIEDEN (introduced by KARL DITTMER). *Dept. of Chemistry, Florida State Univ., Tallahassee.*

1006. Mechanism of lipoxidase catalysis. A. L. TAPPEL,* P. D. BOYER AND W. O. LUNDBERG. *Div. of Agricultural Biochemistry, Univ. of Minnesota, St. Paul.*

1007. Thermal stability of a pyruvic oxidase. WALTER MILITZER AND LOUISE BURNS.* *Dept. of Chemistry, Univ. of Nebraska, Lincoln.*

1008. Action of basic antibiotics on bacterial diamine oxidase and guanidine deamidinase. E. A. ZELLER, L. S. VAN ORDEN* AND W. F. KIRCHHEIMER.* *Depts. of Biochemistry and Bacteriology, Northwestern Univ. Med. School, Chicago, Ill.*

1009. Oxidative metabolism of heart particulate preparations. G. W. E. PLAUT AND KATHARINE L. PLAUT (introduced by W. H. PETERSON). *Inst. for Enzyme Research and Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

1010. Enzymatic oxidation of bisulfite by rat liver. MURRAY HEIMBERG* AND PHILLIP HANDLER. *Dept. of Biochemistry and Nutrition. Duke Univ. School of Medicine, Durham, N. C.*

1011. Enzymatic oxidation of propandiol phosphate. O. NEAL MILLER, C. G. HUGGINS, K. ARAI AND R. P. SANDMAN (introduced by D. BAILEY CALVIN). *Dept. of Biochemistry and Nutrition, Univ. of Texas Med. Branch, Galveston.*

Tissue Respiration and Related Topics

FRIDAY 9:00 A.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: J. H. Quastel

1012. Enzyme inhibition by snake venoms in relation to their neurotoxic action. J. H. QUASTEL AND B. M. BRAGANCA.* (*Research*

Inst., Montreal General Hosp., Montreal, Quebec, Canada.

1013. Effect of fortification and inhibitors on phenol conjugation by rat liver homogenate and fractions. R. H. DeMeio. *Dept. of Biochemistry, Jefferson Med. College, Philadelphia, Pa.*

1014. Metabolism of octamethyl pyrophosphoramide (OMPA) by liver slices and homogenates. Joseph H. Fleisher* and Bernard J. Jandorf. *Enzyme Chemistry Branch, Chemical Corps Med. Labs., Army Chemical Center, Md.*

1015. Effect of various ions and co-factors on respiration of rabbit thymus cells. Melchior D. Carino and Irving R. Sherman (introduced by Willard A. Krehl). *Tumor Research, Hines V. A. Hosp., Hines, Ill.*

1016. Respiratory activity of human leukocytes in vitro. Gordon R. McKinney, R. Wayne Rundles and Samuel P. Martin (introduced by Frederick Bernheim). *Dept. of Medicine, Duke Univ. School of Medicine, Durham, N. C.*

1017. In vitro incorporation of radioactive phosphate into rabbit reticulocytes. H. A. DeLuca and T. D. Lovegrove (introduced by A. B. Macallum). *Dept. of Biochemistry, Univ. of Western Ontario, London, Canada.*

1018. Metabolic block in minced snail tissues. Eugene C. Weinbach (introduced by Leslie Hellerman). *Natl. Insts. of Health, Bethesda, Md.*

1019. Glutamate stimulation of malate and fumarate oxidation in brain homogenates. Samuel P. Bessman (introduced by Sidney Udenfriend). *Research Fndn. of Children's Hosp., Washington, D.C.*

1020. Metabolism of perfused cat brain in vivo. Herbert L. Meltzer,* Reginald M. Taylor* and Warren M. Sperry. *Depts. of Biochemistry and Experimental Psychiatry, New York State Psychiatric Inst., and Depts. of Biochemistry and Psychiatry, Columbia Univ., New York City.*

1021. Oxidation of lactate and pyruvate by thiamine-deficient mice. James H. Jones and Elizabeth de Angeli.* *Dept. of Biochemistry, Univ. of Pennsylvania School of Veterinary Medicine, Philadelphia.*

Friday Afternoon, April 18, 1:15 p.m.

Hormones—General

Friday 1:15 p.m.—Statler, Penn Top North-Center

Chairman: C. H. Li

1022. Hydrolysis of growth hormone by crystalline chymotrypsin and carboxypeptidase. Peter G. Condliffe* and Choh Hao Li. *Dept. of Biochemistry, Univ. of California, Berkeley.*

1023. Effect of benemid on phosphate excretion in parathyroid tetany. William S. Hoffman, Luke Pascale* and Alvin Dubin.* *Hektoin Inst. for Med. Research, Dept. of Physiology, Univ. of Illinois College of Medicine, and Dept. of Medicine, Stritch School of Medicine, Loyola Univ., Chicago.*

1024. Association of thyroxine with plasma proteins. Richard J. Winzler and S. R. Notrica.* *Dept. of Biochemistry and Nutrition, Univ. of Southern California and the School of Medicine, Los Angeles.*

1025. Isolation studies with bovine thyrotropin. S. L. Steelman, J. W. Griffee, Jr. and E. J. Hawrylewicz (introduced by Edwin E. Hayes). *Fundamental Research Dept., Armour Labs., Chicago, Ill.*

1026. Utilization of radioactive iodide by cell-free preparations of beef thyroid tissue. Benjamin Weiss (introduced by David J. Sandweiss). *Research Div., Harper Hosp., Detroit, Mich.* (Physiol.)

1027. Serum gamma$_B$-globulin in normal adults and in rheumatoid arthritics before and during treatment with ACTH or cortisone. Phyllis W. Foster, William Q. Wolfson, Mioko Eya, William D. Robinson, Ivan F. Duff and John J. Rick (introduced by Joseph P. Chandler). *Dept. of Internal Medicine, Univ. of Michigan Med. School, Ann Arbor.*

1028. Metabolism of niacin during induced growth. William T. Beher* and O. H. Gaebler. *Edsel B. Ford Inst. for Med. Research, Henry Ford Hosp., Detroit, Mich.*

1029. Properties of native ACTH. Paul L. Munson, Anna Morse* and Edward Miley.* *Biological Research Labs., Harvard School of Dental Medicine, Boston, Mass.*

1030. Ultraviolet spectroscopy of renin. Erwin Haas, Hildegard Lamfrom* and Harry Goldblatt*. *Inst. for Med. Research, Cedars of Lebanon Hosp., Los Angeles, Calif.*

1031. Effect of ascorbic acid pretreatment on the adrenal response to stress. Albert B. Eisenstein and Joan Boniface (introduced

by ETHEL RONZONI). *Depts. of Preventive Medicine and Neuropsychiatry, Washington Univ. School of Medicine, St. Louis, Mo.*

1032. Metabolism of histamine-2-C^{14}-imidazole. RICHARD W. SCHAYER (introduced by G. L. FOSTER). *Rheumatic Fever Research Inst., Northwestern Univ. Med. School, Chicago, Ill.*

Purines and Pyrimidines—Chemistry and Metabolism

FRIDAY 1:15 P.M.—STATLER, PENN TOP SOUTH

Chairman: G. H. Hitchings

1033. Simultaneous separation and determination of purines, pyrimidines and amino acids in hydrolysates of bacterial cells. J. S. WALL,* P. W. WILSON AND R. H. BURRIS. *Depts. of Biochemistry and Bacteriology, Univ. of Wisconsin, Madison.*

1034. Conversion of hypoxanthine to inosinic acid by pigeon liver enzymes. WILLIAM J. WILLIAMS* AND JOHN M. BUCHANAN. *Dept. of Physiological Chemistry, Univ. of Pennsylvania School of Medicine, Philadelphia.*

1035. Enzymatic conversion of barbituric acid to urea and malonic acid. OSAMU HAYAISHI (introduced by ARTHUR KORNBERG). *Natl. Insts. of Health, Bethesda, Md.*

1036. Nitrogen precursors of hypoxanthine. JOHN C. SONNE AND I. LIN (introduced by JOHN M. BUCHANAN). *Dept. of Physiological Chemistry, Univ. of Pennsylvania School of Medicine, Philadelphia.*

1037. Acid-soluble products of metabolism of orotic acid-6-C^{14}. ROBERT B. HURLBERT (introduced by VAN R. POTTER). *McArdle Memorial Lab., Univ. of Wisconsin, Madison.*

1038. Studies of 6-azathymine as an antimetabolite. WILLIAM H. PRUSOFF AND WILLIAM L. HOLMES (introduced by A. D. WELCH). *Dept. of Pharmacology, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

1039. 4-Amino-5-imidazolecarboxamide: absence of correlation between its accumulation and inhibition of bacterial growth by sulfonamides. RICHARD C. STEWART* AND M. G. SEVAG. *Dept. of Microbiology, Univ. of Pennsylvania School of Medicine, Philadelphia.*

1040. Hematological effects of certain 2,4-diaminopyrimidine antagonists of folic acid. LEONARD HAMILTON,* FREDERICK S. PHILIPS,* DONALD A. CLARKE,* STEPHEN S. STERNBERG* AND GEORGE H. HITCHINGS. *Sloan-Kettering Inst. for Cancer Research, New York City and Wellcome Research Labs., Tuckahoe, N. Y.*

1041. Purine metabolism of diaminopurine-resistant *Lactobacillus casei*. GERTRUDE B. ELION AND M. EARL BALIS (introduced by GEORGE B. BROWN). *Wellcome Research Labs., Tuckahoe, N. Y.; and Labs. of the Sloan-Kettering Inst. for Cancer Research, New York City.*

1042. Utilization of some purine ribose derivatives of *Lactobacillus casei*. M. EARL BALIS AND GERTRUDE B. ELION (introduced by GEORGE H. HITCHINGS). *Labs. of the Sloan-Kettering Inst. for Cancer Research, New York City, and the Wellcome Research Labs., Tuckahoe, N. Y.*

Coenzymes and Enzyme Inhibitors

FRIDAY 1:15 P.M.—STATLER, SKY TOP

Chairman: A. Kornberg

1043. Microfluorometric measurement of phosphopyridine nucleotides in blood serum and cells. HELEN B. BURCH (introduced by C. G. KING). *Dept. of Chemistry, Columbia Univ., New York City.*

1044. Pyridine nucleotide concentrations in human red blood cells. JOHN G. REINHOLD, ALICE F. HOGANS* AND JAMES R. STUART.* *Pepper Lab. of Clin. Medicine, Hosp. of the Univ. of Pennsylvania, Philadelphia.*

1045. Comparison of rates of reaction of bound and free diphosphopyridine nucleotide. LAZARUS ASTRACHAN (introduced by NATHAN O. KAPLAN). *McCollum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md.*

1046. Instability of reduced DPN ($DPNH_2$) in presence of glyceraldehyde-3-phosphate dehydrogenase. EDWIN G. KREBS AND GALE W. RAFTER (introduced by EARL R. NORRIS). *Dept. of Biochemistry, Univ. of Washington, Seattle.*

1047. Pyridine nucleotide transhydrogenase. NATHAN O. KAPLAN, SIDNEY P. COLOWICK AND ELIZABETH F. NEUFELD*. *McCollum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md.*

1048. Hydrolysis of diphosphopyridine nucleotide by snake venom. DEAN P. EPPERSON (introduced by E. ALBERT ZELLER). *Divs. of Surgery and Biochemistry, Mayo Fndn., Rochester, Minn.* (Physiol.)

1049. Crystalline pyridoxamine and pyridoxal phosphates. ELBERT A. PETERSON,* HERBERT A. SOBER AND ALTON MEISTER. *Natl. Cancer Inst., Natl. Inst.. of Health, Bethesda, Md.*

1050. Role of vitamin B_6 in deamination of serine. DAVID E. METZLER* AND ESMOND E. SNELL. *Dept. of Chemistry, Univ. of Texas, Austin.*

1051. Model reactions of phosphorus-containing enzyme inactivators. BRENNIE E. HACKLEY, JR.* AND THEODOR WAGNER-JUAREGG. *Medicinal Chemistry Branch, Chemical Corps Medical Labs., Army Chemical Center, Md.*

1052. Inactivation of lysozyme by trace elements. R. E. FEENEY, E. D. DUCAY AND L. R. MACDONNELL (introduced by HANS LINEWEAVER). *Western Regional Research Lab., U. S. Dept. of Agriculture, Albany, Calif.*

1053. Reversibility of mercuric chloride inhibition of urease. H. E. EVERT (introduced by C. L. GEMMILL). *Dept. of Pharmacology, Univ. of Virginia Med. School, Charlottesville.*

1054. Influence of certain inhibitors on oxidation of citrate, isocitrate and cisasconitate by rat liver slices. IRVING R. SHERMAN* AND RALPH C. CORLEY. *Dept. of Chemistry, Purdue Univ., Lafayette, Indiana.*

Lipid Synthesis

FRIDAY 1:15 P.M.—MANHATTAN CENTER, MASONIC ROOM

Chairman: S. Gurin

1055. Effect of certain naphthoquinones on fat formation and the utilization of 1-C^{14} acetate by *Fusarium lini* bolley. R. J. COLEMAN* AND F. F. NORD. *Dept. of Organic Chemistry and Enzymology, Fordham Univ., New York City.*

1056. Synthesis of higher fatty acids by slices of maturing peanut cotyledons. P. K. STUMPF AND ELDON H. NEWCOMB*. *Div. of Plant Biochemistry, Univ. of California, Berkeley.*

1057. Biosynthesis of radioactive long chain fatty acids by homogenized pigeon liver. ROSCOE O. BRADY* AND SAMUEL GURIN. *Dept. of Physiological Chemistry, Univ. of Pennsylvania School of Medicine, Philadelphia.*

1058. Nutritional factors in lipogenesis from acetate in tissue slices of the rat. GRACE MEDES AND SIDNEY WEINHOUSE. *Lankenau Hosp. Research Inst. and Inst. for Cancer Research, Philadelphia, Pa.*

1059. Influence of starvation and of pyruvate administration upon utilization of radioacetate in the intact rat. JOHN G. CONIGLIO,* CARL E. ANDERSON AND C. S. ROBINSON. *Dept. of Biochemistry, Vanderbilt Univ. School of Medicine, Nashville, Tenn.*

1060. Effect of certain B-complex vitamin deficiencies upon lipogenesis. K. GUGGENHEIM* AND R. E. OLSON. *Dept. of Nutrition, Harvard School of Public Health, Boston, Mass.*

1061. Kinetic aspects of acetate and lipid metabolism in the intact rat. T. T. HUTCHENS AND J. T. VAN BRUGGEN (introduced by E. S. WEST). *Dept. of Biochemistry, Univ. of Oregon Med. School, Portland.*

1062. Time course of lipid labeling following single injections of C^{14} acetate. J. T. VAN BRUGGEN*, C. K. CLAYCOMB,* T. T. HUTCHENS* AND E. S. WEST. *Dept. of Biochemistry, Univ. of Oregon Med. School, Portland.*

1063. Radioactive lipids from tissue extracts of rats injected with $NaHC^{14}O_3$. LAWRENCE M. MARSHALL* AND FELIX FRIEDBERG. *Dept. of Biochemistry, Howard Univ. College of Medicine. Washington, D. C.*

1064. Biosynthesis of squalene and cholesterol. ROBERT C. LANGDON (introduced by K. BLOCH). *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

Proteases

FRIDAY 1:15 P.M.—MANHATTAN CENTER, GOLD ROOM

Chairman: E. L. Smith

1065. Purification and properties of prolidase from erythrocytes. ELIJAH ADAMS* AND EMIL L. SMITH. *Lab. for Study of Hereditary and Metabolic Disorders, Univ. of Utah, Salt Lake City.*

1066. Peptidase action on peptides containing proline and hydroxyproline. NEIL C. DAVIS AND ELIJAH ADAMS (introduced by EMIL L. SMITH). *Lab. for Study of Hereditary and Metabolic Disorders, Univ. of Utah, Salt Lake City.*

1067. Citrus aminopeptidases. EUGENE F. JANSEN, ROSIE JANG* AND A. K. BALLS. *Western Regional Research Lab., Bureau of Agricultural and Industrial Chemistry, U. S. Dept. of Agriculture, Albany, Calif.*

1068. Effect of cobalt administration on dipeptidase activity of rat plasma and surviving diaphragm. THEODORE B. SCHWARTZ* AND CATHERINE C. TOWBIN* (introduced by FRANK L. ENGEL). *Dept. of Medicine, Duke Univ., Durham, N. C.* (Physiol.)

1069. Activators of the hydrolysis of glutathione. FRANCIS BINKLEY AND G. M. CHRISTENSEN.* *Emory Univ. School of Dentistry, Emory Univ., Ga.*

1070. Enzymatic splitting and synthesis of glutathione (GSH). HEINRICH WAELSCH, PAUL J. FODOR* AND ALEX MILLER.* *New York State Psychiatric Inst. and Dept. of Biochemistry, Columbia Univ., New York City.*

1071. Amphoteric properties of trypsin. J. A. DUKE AND M. BIER (introduced by F. F. NORD). *Dept. of Organic Chemistry and Enzymology, Fordham Univ., New York City.*

1072. Reaction of trypsin system with diisopropylfluorophosphate (DFP). HANS NEURATH, LEON W. CUNNINGHAM, JR.,* FRANK TIETZE* AND N. MICHAEL GREEN.* *Dept. of Biochemistry, Univ. of Washington, Seattle.*

1073. Serine phosphoric acid from diisopropylphosphorylated chymotrypsin. NORWOOD K. SCHAFFER,* STEPHEN C. MAY, JR.* AND WILLIAM H. SUMMERSON. *Chemical Corps Med. Labs., Army Chemical Center, Md.*

1074. Photooxidation of chymotrypsin in presence of methylene blue. LEOPOLD WEIL AND A. R. BUCHERT.* *Eastern Regional Research Lab., Philadelphia, Pa.*

1075. Structure of pepsin. MARTIN B. WILLIAMSON AND JOHN M. PASSMANN (introduced by HENRY H. BULL). *Dept. of Biochemistry, Loyola Univ. School of Medicine, Chicago, Ill.*

1076. Hydrolysis of acetylated ovalbumin by crystalline pepsin. LILA MILLER AND OTTO NEUHAUS.* *Dept. of Biological Chemistry, Univ. of Michigan, Ann Arbor.*

READ BY TITLE

1077. Thiosulfates and methionine metabolism in man. ANTHONY A. ALBANESE, BETTY L. VESTAL* AND LOUKIA STEPHANSON.* *Nutritional Research Lab., St. Luke's Hosp., New York City.*

1078. Chromatographic separation studies on the products of ribonuclease action. RONALD A. BECKER* AND FRANK WORTHINGTON ALLEN. *Div. of Biochemistry, Univ. of California Med. School, Berkeley.*

1079. Influence of fluorides on mechanism of tooth development. M. K. BERKUT* AND JAMES C. ANDREWS. *Dept. of Biological Chemistry and Nutrition, Univ. of North Carolina School of Medicine, Chapel Hill.*

1080. Solubilities of testosterone and estradiol esters in biologic systems. FRITZ BISCHOFF, ROBERT E. KATHERMAN,* YEE SING YEE* AND JOHN J. MORAN.* *Santa Barbara Cottage Hosp. Research Inst., Santa Barbara, Calif.*

1081. Effect of some dietary organic peroxides on the N-demethylation of 3-methyl-4-monomethylaminoazobenzene. R. R. BROWN*, J. A. MILLER AND E. C. MILLER. *McArdle Memorial Lab., Univ. of Wisconsin, Madison.*

1082. Prevention of certain B-vitamin deficiencies with ascorbic acid or antibiotics. FLOYD S. DAFT AND KLAUS SCHWARZ. *Natl. Insts. of Health, Bethesda, Md.*

1083. Synthesis of pyridine nucleotides in human erythrocytes in vitro. MARY DUNCAN,* HERBERT P. SARETT AND WILLIAM B. WENDEL. *Dept. of Biochemistry and Nutrition Research Lab., Dept. of Medicine, Tulane Univ. School of Medicine, New Orleans, La.*

1084. Quantitative measurement of blood (peroxidase) in stools. ALFRED H. FREE, MARION H. COOK* AND HELEN M. FREE.* *Miles-Ames Research Lab., Elkhart, Ind.*

1085. Seasonal variation in toxicity of demerol in white mice. ROBERT E. GALLOWAY* AND EMMETT B. CARMICHAEL. *Biochemistry Dept., Med. College and School of Dentistry, Univ. of Alabama, Birmingham.*

1086. Effects of estradiol on human endometrium and placenta in vitro. DWAIN D. HAGERMAN* AND CLAUDE A. VILLEE. *Depts. of Biological Chemistry and Obstetrics, Harvard Med. School, Boston, Mass.*

1087. Metabolism of iron-containing proteins with radioactive iron and carbon. HAROLD L. HELWIG* AND DAVID M. GREENBERG. *Div. of Biochemistry, Univ. of California School of Medicine, Berkeley.*

1088. Application of infrared spectroscopy to the differentiation of trisubstituted steroidal olefines. H. HIRSCHMANN. *Dept. of Medicine, Western Reserve Univ., Cleveland, Ohio.*

1089. Acid and alkaline phosphatase of degenerating and regenerating peripheral nerve. D. M. HOLLINGER* AND R. J. ROSSITER. *Dept. of Biochemistry, Univ. of Western Ontario, London, Canada.*

1090. Binding of neutral organic molecules by proteins. IRVING M. KLOTZ AND JANET AYERS.* *Dept. of Chemistry, Northwestern Univ., Evanston, Ill.*

1091. Free cholesterol ester relationship as determined by digitonin precipitation and low temperature solubility separation. ALFRED E. KOEHLER AND ELSIE HILL.* *Sansum Clinic Research Fndn. and the Santa Barbara Cottage Hospital, Santa Barbara, Calif.*

1092. Photoelectric measurement of pH. GRANVIL C. KYKER, JOSE A. GOYCO,* MARIA L. QUINTANA* AND ELBA IRIS PORRATA.* *Dept. of Biochemistry and Nutrition, School of Tropical Medicine, Univ. of Puerto Rico School of Medicine, San Juan.*

1093. Quantitative estimation of acetone bodies by means of alkaline vanillin reagent. VICTOR E. LEVINE AND MICHAEL TATERKA.* *Creighton Univ. School of Medicine, Omaha, Nebr.*

1094. Preparation of a biologically purified and clinically active ACTH from horse pituitary glands. CHOH HAO LI. *Dept. of Biochemistry, Univ. of California, Berkeley.*

1095. Transfer of N and P from parent T_7 bacteriophage to its progeny. R. P. MACKAL* AND L. M. KOZLOFF. *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

1096. Structure of a catechol and a 3,4-dihydroxyphenyalanine melanin. H. S. MASON AND A. LADA.* *Dept. of Biology, Princeton Univ. and the U. S. Public Health Service, Bethesda, Md.*

1097. Formaldehyde-pyruvate condensing enzyme. MARGARET C. MITCHELL* AND CAMILLO ARTOM. *Dept. of Biochemistry, Bowman Gray School of Medicine, Winston-Salem, N. C.*

1098. Physical characterization and kinetic properties of beef liver glutamic acid dehydrogenase. JAMES ALLEN OLSON (introduced by CHRISTIAN B. ANFINSEN). *Dept. of Biochemistry, Harvard Med. School, Boston, Mass., and Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

1099. Origin and nature of abnormal proteins in myeloma. FRANK W. PUTNAM. *Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

1100. Quantitative estimation of thromboplastic activity. MAURICE M. RAPPORT AND FRANK MALTANER.* *Div. of Labs. and Research, New York State Dept. of Health, Sloan-Kettering Inst. for Cancer Research, New York City.*

1101. Rates of absorption of barbiturates in the rat. D. V. N. REDDY* AND LEOPOLD R. CERECEDO. *Dept. of Biochemistry, Fordham Univ., New York City.*

1102. Influence of adrenal cortex on protein transformations in vitro. SIDNEY ROBERTS. *Dept. of Physiological Chemistry, Univ. of California School of Medicine, Los Angeles.*

1103. Synthesis of biotin or a biotin analogue by the anaerobe, clostridium perfringens PB6K. EUGENE ROSENWASSER* AND M. J. BOYD. *Div. of Biological Chemistry, Hahnemann Med. College, Philadelphia, Pa.*

1104. Beta disturbance of electrophoretic patterns in disease. JOSEPH I. ROUTH AND W. D. PAUL.* *Depts. of Biochemistry and Medicine, State Univ. of Iowa College of Medicine, Iowa City.*

1105. Xanthine oxidase distribution in liver cell fractions. ARNOLD H. SCHEIN AND EMILY M. YOUNG (introduced by KURT G. STERN). *Dept. of Biochemistry, Univ. of Vermont, College of Medicine, Burlington, Vt.*

1106. An anomalous effect of citrate on the respiration of rat liver slices in the presence of calcium ion. IRVING R. SHERMAN* AND RALPH C. CORLEY. *Dept. of Chemistry, Purdue Univ., Lafayette, Ind.*

1107. Effects of ultrasonic radiation upon nucleic acids and sodium nucleates. M. SPIEGEL-ADOLF AND P. J. ERNST.* *Temple Univ. School of Medicine, Dept. of Colloid Chemistry and College of Liberal Arts, Dept. of Physics, Philadelphia, Pa.*

1108. Anticoagulant activity of dextran sulfate esters. HOMER E. STAVELY, PHILIP J. BAKER, JR. AND H. G. PAYNE (introduced by ALFRED E. WILHELMI). *Pharmaceutical and Chemical Research Divs., Commercial Solvents Corp., Terre Haute, Ind.*

1109. Selective uptake of Ag^{111} by pure or mixed fibrous tumors. HAROLD D. WEST AND ALFONSO P. JOHNSON.* *Dept. of Biochemistry, Meharry Med. College, Nashville, Tenn.*

1110. Mechanism of action of dinitrophenol. ROBERT F. WITTER AND ETHEL NEWCOMB.* *Dept. of Biochemistry, Univ. of Rochester School of Medicine, Rochester, N. Y.*

1111. Action of cortisone acetate on hemolysis produced by the enzymic formation of lysolecithin from dimyristoyl lecithin. E. A. ZELLER. *Dept. of Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

THE AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

Forty-second Annual Meeting

New York City, April 14–18, 1952

(An asterisk following an author's name indicates "by invitation")*

Monday Evening, April 14, 8:00 p.m.

Symposium: Design and Interpretation of Clinical Experiments with Drugs (joint with Biometric Society, ENAR)

MONDAY, 8:00 P.M.—STATLER, KEYSTONE ROOM

Chairman: C. I. Bliss

1112. Quantitative comparison of modified insulins at the clinical level. JOSEPH L. IZZO* AND S. LEE CRUMP.* *Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

DISCUSSION: ALEXANDER MARBLE AND PAUL MEIER. *Boston, Mass., and Princeton, Univ., Princeton, N. J.*

1113. Clinical studies of analgesic drugs:
a) Experimental pharmacology and measurement of the subjective response. H. K. BEECHER. *Massachusetts General Hosp., Boston.*
b) Some statistical problems in measuring the subjective response to drugs. FRED MOSTELLER,* *Harvard Univ., Boston, Mass.*

DISCUSSION: ABRAHAM WIKLER AND N. B. EDDY, *U. S. Public Health Service, Lexington, Ky., and Bethesda, Md.*

1114. Pharmacological and biometrical requirements in clinical assay of diuretic agents. HARRY GOLD, THEODORE GREINER AND C. I. BLISS. *Cornell Univ. Med. College, New York City, and Connecticut Agricultural Experiment Station, New Haven, Conn.*

DISCUSSION: R. A. LEHMAN AND DONALD MAINLAND. *Campbell Pharmaceutical Co. and New York Univ. College of Medicine, New York City.*

Tuesday Morning, April 15, 9:00 a.m.

Anticonvulsants

TUESDAY, 9:00 A.M.—STATLER, GEORGIAN ROOM

Chairman: E. A. Swinyard

1115. Comparison of antiepileptic drugs in mice and rats. WILLIAM C. BROWN,* LOUIS S. GOODMAN AND EWART A. SWINYARD. *Dept. of Pharmacology, College of Medicine and College of Pharmacy, Univ. of Utah, Salt Lake City.*

1116. Influence of thyroidectomy, propylthiouracil and thyroxin on brain excitability. D. M. WOODBURY, R. E. HURLEY,* N. G. LEWIS, M. W. MCARTHUR,* W. W. COPELAND,* J. F. KIRSCHVINK* AND LOUIS S. GOODMAN. *Dept. of Pharmacology, Univ. of Utah College of Medicine, Salt Lake City.*

1117. Effects of liver injury and nephrectomy on anticonvulsant activity of trimethadione. EWART A. SWINYARD, R. E. BRINEY,* G. A. BUCHANAN,* D. A. BURNETT,* KEITH FORSYTH,* HAROLD OLPIN* AND LOUIS S. GOODMAN. *Dept. of Pharmacology, College of Pharmacy and College of Medicine, Univ. of Utah, Salt Lake City.*

1118. Potency of antiepileptic drug combinations: phenobarbital and diphenylhydantoin and maximal electroshock seizures. LAWRENCE C. WEAVER,* EWART A. SWINYARD, LOWELL A. WOODBURY AND LOUIS S. GOODMAN. *Depts. of Pharmacology and Physiology, College of Pharmacy and College of Medicine, Univ. of Utah, Salt Lake City.*

1119. Electroshock threshold and dose response to cortisone administration. DORESY E. HOLTKAMP, LEO F. MANSOR AND ARTHUR E. HEMING (introduced by EDWIN J. FELLOWS). *Research and Development Div., Smith, Kline and French Labs., Philadelphia, Pa.*

1120. *In vitro* release of CO_2 by N-alkyl oxazolidine-2,4-diones and their protection against Metrazol convulsions. J. D. TAYLOR AND E. L. BERTCHER (introduced by R. K. RICHARDS). *Dept. of Pharmacology, Abbott Labs., North Chicago, Ill.*

1121. Anticonvulsant action of CO_2 on various types of seizures. G. M. EVERETT, J. S. GOODSELL* AND J. E. P. TOMAN. *Dept. of Pharmacology, Abbott Labs., North Chicago, Ill.*

1122. Anticonvulsant action of 'Hibicon' (N-benzyl-B-chloropropionamide). B. K. HARNED, RAYMOND W. CUNNINGHAM, FRANK H. SMITH,* MARY C. CLARK* AND MARGARET KANE.* *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

1123. Relationship between barbital concentration and antagonism to metrazol. VERSA V. COLE AND H. R. HULPIEU. *Army Chemical Center, Md., and Indiana Univ. School of Medicine, Indianapolis.*

1124. Blood nonprotein-nitrogen constituents during barbiturate addiction and withdrawal. ANNA J. EISENMAN, JEWELL W. SLOAN* AND H. F. FRASER.* *NIMH Addiction Research Center, U. S. Public Health Service Hosp., Lexington, Ky.*

Cardiac Drugs I

TUESDAY, 9:00 A.M.—STATLER, PARLOR 1

Chairman: Allan D. Bass

1125. Action of enzyme inhibitors on sinus rate, contractility, electrical excitability, refractory period and conduction velocity in the isolated rabbit auricle. ELMER A. GARDNER* AND ALFRED FARAH. *Dept. of Pharmacology, New York State College of Medicine, Syracuse.*

1126. Acute cardiovascular refractoriness induced by epinephrine. PATRICIA FLAUM* AND WILLIAM G. CLARK. *Dept. of Physiological Chemistry, Univ. of California School of Medicine, and Veterans Admin. Center, Los Angeles.*

1127. Action of procaine amide on ventricular tachycardia produced by coronary artery ligation. HAROLD STERN,* JOHN YELNOSKY* AND BYRON B. CLARK. *Pharmacology Dept., Tufts College, Med. School, Boston, Mass.*

1128. Effect of diphenylhydantoin sodium (Dilantin) on digitalis arrhythmias. LOS MOSEY, MYRA D. TYLER AND ROBERT O. BAUER (introduced by GEORGE L. MAISON). *Dept. of Pharmacology, Boston Univ. School of Medicine, Boston, and Cushing Veterans Hosp., Framingham, Mass.*

1129. Assay of coronary dilator drugs in isolated mammalian hearts and intact animals. F. C. LU, M. G. ALLMARK,* ELIZABETH J. CARMICHAEL,* D. V. MCMILLAN* AND A. LAVALLE.* *Food and Drug Labs., Dept. of Natl. Health and Welfare, Ottawa, Canada.*

1130. Papaverine analogs III. Some 3,4-dihydroisoquinolines as coronary vasodilators. CALVIN HANNA AND JAMES SHUTT (intro-

duced by E. G. Gross). *Dept. of Pharmacology, State Univ. of Iowa, Iowa City.*

1131. Coronary dilating action of 1-hydrazino phthalazine (BA-5968) (Apresoline) in the canine heart-lung preparation. Walter Barrett,* William Reitze,* A. J. Plummer and F. F. Yonkman. *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

1132. Hemodynamic factors in control of coronary circulation in the dog. Martin M. Winbury and Lyle D. Calvin (introduced by W. E. Hambourger). *Div. of Biological Research, G. D. Searle & Co., Chicago, Ill.*

1133. Experimental myocardial infarction in intact dog. Frederick H. Meyers (introduced by Robert A. Woodbury) *Div. of Pharmacology, Univ. of Tennessee, Memphis.*

1134. Pharmacologic responses of isolated rabbit heart during x-irradiation. L. E. Ellinwood,* J. E. Wilson* and J. M. Coon. *USAF Radiation Lab. and Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1135. Action of fluoride on the heart. O. Loewi. *Dept. of Pharmacology, New York Univ. College of Medicine, New York City.*

Toxicity I

Tuesday, 9:00 a.m.—Statler, Parlor 2

Chairman: W. Clarke Wescoe

1136. Effects of emulsifying agents upon the intestinal content of the white rat. A. R. Bourke,* J. P. Frawley* and O. G. Fitzhugh. *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1137. Method for the production of disseminated necrosis and calcification in the cardiovascular system of albino rats. David Lehr and Jacob Churg.* *Dept. of Pharmacology, New York Med. College, Flower and Fifth Ave. Hosps., New York City.*

1138. Akee toxicity. Mark F. Wynn,* Edward Larson and Donald D. Doughty.* *Dept. of Physiology and Pharmacology, Univ. of Miami Med. Research Unit, Veterans Admin. Hosp., Coral Gables, Fla.*

1139. Toxicological observations on two quaternary ammonium germicides. J. K. Finnegan, P. S. Larson, R. Blackwell Smith, Jr., H. B. Haag, J. Douglas Reid* and M. L. Dreyfuss.* *Depts. of Pharmacology and Bacteriology, Med. Coll. of Virginia, Richmond, and Pathology Lab., Chesapeake and Ohio Hosp., Clifton Forge, Va.*

1140. Method for the determination of quaternary ammonium compounds in biological media. Ruth Mitchell* and Bryon B. Clark. *Pharmacology Dept., Tufts Coll. Medical School, Boston, Mass.*

1141. Formation of inorganic cyanide from aliphatic nitriles in rabbits. Frederic Rieders (introduced by Charles M. Gruber). *Dept. of Pharmacology and Div. of Industrial Medicine, Jefferson Med. College, Philadelphia, Pa.*

1142. Mechanism of toxicity of thioglycolate. Marian V. Freeman and Robert M. Rosenthal (introduced by J. H. Draize). *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1143. Oral toxicity of 2,2′-methylenebis(4-methyl-6-tertiary-butylphenol) (2246). Ernest C. Hagan (introduced by John H. Draize). *Div. of Pharmacology, Food and Drug Admin. Washington, D. C.*

1144. Isolation of an epoxide metabolite from fat tissue of dogs fed heptachlor. Jack L. Radomski and Bernard Davidow (introduced by A. J. Lehman). *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1145. The metabolite of heptachlor, its analysis, storage and toxicity. Bernard Davidow and Jack Radomski (introduced by A. J. Lehman). *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1146. Some pharmacological effects of allethrin. Geoffrey Woodard, William D. Harkness and Stanley E. Srensek (introduced by Arnold J. Lehman). *Div. of Pharmacology, Food and Drug, Admin., Washington, D. C.*

Tuesday Afternoon, April 15, 1:15 p.m.

Central Nervous System

Tuesday, 1:15 p.m.—Statler, Georgian Room

Chairman: James E. P. Toman

1147. Comparison of the rate of uptake of radioactive thyroxine by the hypophysis in normal, hypothyroid and hypermetabolic rabbit. Edward O. Harper,* Paul A. Mattis, and J. W. Boehne.* *Dept. of Psychiatry and Pharmacology, Western Reserve Univ. School of Medicine, Cleveland, Ohio.*

1148. An electrical method of assaying the effects of drugs on the wound potential of skin. T. C. Barnes. *Dept. of Pharmacology, Hahnemann Med. College and Hosp., Philadelphia, Pa.*

1149. Disruption of external respiration by eserine and its restoration. C. A. de Candole (intro-

duced by M. K. McPhail). *Suffield Exptl. Station, Alberta, Canada.*

1150. Effects of epinephrine on threshold electroshock after-discharge. Bruno Minz and Edward Domino (introduced by Klaus R. Unna). *Dept. of Pharmacology, Univ. of Illinois College of Medicine, Chicago, Ill.*

1151. The survival of rats with high free acetyl choline (ACh) in the brain. W. W. Tourtellotte (introduced by J. M. Coon). *Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1152. Convulsant action of diols related to diethyl propanediol. Peter E. Dresel,* Irwin H. Slater, E. J. Pribyl* and J. F. O'Leary.* *Divs. of Orthopedic Surgery and Pharmacology, Univ. of Rochester School of Medicine, Rochester, and Research and Development Labs., E. R. Squibb and Sons, New York City.*

1153. Emetic trigger zone and motion sickness in dogs. S. C. Wang* and H. I. Chinn. *College of Physicians and Surgeons, Columbia Univ., New York City, and School of Aviation Medicine, Randolph Field, Tex.*

1154. Ultraviolet absorption spectra and central nervous system activity of some 2-Pyridyl compounds. David Megirian (introduced by I. H. Slater). *Divs. of Orthopedic Surgery and Pharmacology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

1155. General pharmacology of 4-alkoxy-β-(1-piperidyl) propiophenones. Alice B. Richards,* Benedict E. Abreu, Earl R. Bockstahler* and Donald L. Wright.* *Research Dept., Pitman-Moore Co., Indianapolis, Ind.*

1156. Nervous system effects of 4-alkoxy-β-(1-piperidyl) propiophenones. Benedict E. Abreu, Alice B. Richards* and George R. Burch.* *Research Dept., Pitman-Moore Co., Indianapolis, Ind.*

1157. Some pharmacologic effects of monohalogenated tetrahydrothiophene 1,1-dioxides (sulfolanes). William M. Alexander,* Benedict E. Abreu and H. Eldridge Faith.* *Research Dept., Pitman-Moore Co., Indianapolis, Ind.*

Cardiac Drugs II

Tuesday, 1:15 p.m.—Statler, Parlor 1

Chairman: Kenneth I. Melville

1158. Renal excretion of radioactive digitoxin in human subjects with cardiac failure. G. T. Okita,* F. E. Kelsey, P. J. Talso, L. B. Smith and E. M. K. Geiling. *Depts. of Pharmacology and Medicine, Univ. of Chicago, Chicago, Ill.*

1159. Effects of acetylcholine on permeability to Na and K of isolated guinea pig hearts. W. C. Holland, Clara Elizabeth Dunn* and Margaret E. Greig. *Dept. of Pharmacology, Vanderbilt Univ. School of Medicine, Nashville, Tenn.*

1160. Cardiovascular and serum potassium changes in fatal hyperthermia. L. I. Goldberg,* H. K. Ezell* and R. P. Walton. *Depts. of Pharmacology and Chemistry, Med. College of South Carolina, Charleston.*

1161. Comparative study of non-ionic, cationic and anionic surface active agents on frog heart. Alfred G. Lisi (introduced by Charles M. Gruber). *Dept. of Pharmacology, Jefferson Med. College, Philadelphia, Pa.*

1162. Inotropic activity of blood serum on myocardium compared with that of cardiac glycosides. William T. Salter and Richard M. Taylor.* *Labs. of Pharmacology and Toxicology, Yale Univ. School of Medicine, New Haven, Conn.*

1163. Further studies on relation of copper to cardiac glycoside action. Harold Hardman,* Donald R. Bennett,* John F. Palmer,* Robert Parry* and Maynard B. Chenoweth. *Depts. of Pharmacology and Chemistry, Univ. of Michigan, Ann Arbor.*

1164. Elevation of cardiac depressant dose of a barbiturate with cardiac stimulant drugs. Kenneth J. Boniface and John M. Brown (introduced by Robert P. Walton). *Depts. of Pharmacology and Surgery (Anesthesiology), Med. College of South Carolina, Charleston.*

1165. Cardiovascular and central nervous system actions of cassaine and cassaidine. M. deV. Cotten,* L. I. Goldberg* and R. P. Walton. *Dept. of Pharmacology, Med. College of South Carolina, Charleston.*

1166. A new blood flow meter. Ira Mark Barash* and Byron B. Clark. *Pharmacology Dept., Tufts College Med. School, Boston, Mass.*

1167. Further development of a mechanical heart-lung for study of drugs on peripheral circulation. Russell A. Waud. *Dept. of Pharmacology, Univ. of Western Ontario Med. School, Ontario, Canada.*

Toxicity II

Tuesday, 1:15 p.m.—Statler, Parlor 2

Chairman: J. M. Coon

1168. Cutaneous and intravenous toxicity of 'Endothal' (disodium-3, 6-endoxohexahydrophthalic acid). Franz Goldstein (introduced by Charles M. Gruber). *Div. of Industrial Medicine, Jefferson Med. College, Philadelphia, Pa.*

1169. Estimation of 'Endothal' in urine. STANLEY E. SRENSEK, WILLIAM D. HARKNESS AND GEOFFREY WOODARD (introduced by A. J. LEHMAN). *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1170. Toxicity of certain surface-active agents to to eye mucosa. J. H. DRAIZE AND ELSIE A. KELLEY.* *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1171. Quantitative determination of gamma hexachlorcyclohexane in animal tissue. S. ANDERSON PEOPLES. *School of Veterinary Medicine, Univ. of California, Davis.*

1172. Nephrotoxic action of tetrathionate in the rabbit. JACK P. SAUNDERS,* HAROLD I. GREEN* AND J. H. WILLS. *Pharmacology Branch, Chemical Corps Med. Labs., Army Chemical Center, Md.*

1173. Acute and subacute toxicity of ethylene diamine tetraacetic acid (EDTA) salts. ROBERT O. BAUER, FIORE R. RULLO, CHARLES SPOONER AND EARL WOODMAN (introduced by GEORGE L. MAISON). *Dept. of Pharmacology, Boston Univ. School of Medicine, Boston, Mass.*

1174. Acute and sub-acute inhalation toxicity of hydrazine vapors to rats. FRANCIS P. MCGRATH,* CHARLES C. COMSTOCK* AND FRED W. OBERST. *Chemical Corps Med. Labs., Army Chemical Center, Md.*

1175. Chronic inhalation toxicity of hydrazine vapors to dogs and rats. CHARLES C. COMSTOCK* AND FRED W. OBERST. *Chemical Corps Med. Labs., Army Chemical Center, Md.*

1176. A universally useful absorption base for ointments. REINHARD R. BEUTNER. *New England College of Pharmacy, Boston, Mass.*

1176a Medicinal uses of alginic acid and of its salts. F. M. BERGER AND B. J. LUDWIG.* *Wallace Labs., Inc., New Brunswick, N. J.*

Pharmacology Society Business Meeting

TUESDAY, 4:00 P.M.—STATLER, PENN TOP SOUTH

Joint Session of the Federation

TUESDAY, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Program on p. 492

Wednesday Morning, April 16, 9:00 a.m.

Analgesics

WEDNESDAY, 9:00 A.M.—STATLER, GEORGIAN ROOM

Chairman: R. M. Featherstone

1177. Comparative pharmacology of *d*-, *dl*- and *l*-Dromoran and related ether derivatives. W. M. BENSON,* P. L. STEFKO* AND L. O. RANDALL. *Dept. of Pharmacology, Hoffmann-LaRoche Inc., Nutley, N. J.*

1178. Tissue distribution and excretion of *d*- and *l*-methadone. E. LEONG WAY AND CHEN-YÜ SUNG.* *College of Pharmacy and Div. of Pharmacology and Exptl. Therapeutics, Univ. of California, School of Medicine, San Francisco.*

1179. Effect of liver on biotransformation of *d*- and of *l*-methadone. CHEN-YÜ SUNG* AND E. LEONG WAY. *College of Pharmacy and Div. of Pharmacology and Exptl. Therapeutics, Univ. of California School of Medicine, San Francisco.*

1180. Analgesic activity and toxic effects of acetylmethadol isomers in man. HENRY K. BEECHER AND ARTHUR S. KEATS.* *Anesthesia Lab., Harvard Med. School at Massachusetts General Hosp., Boston.*

1181. Physiological disposition of meperidine (Demerol) in man. PHILIP A. LIEF,* JOHN J. BURNS,* E. M. PAPPER, BETTY L. BERGER,* ALFRED WOLLACK AND BERNARD B. BRODIE. *New York Univ. Research Service, Goldwater Memorial Hosp., and Dept. of Anesthesia, Columbia Univ., New York City; National Heart Inst., National Insts. of Health, Bethesda, Md.*

1182. Hyperglycemia produced by morphine-like analgesic agents. K. K. KIMURA, E. F. KEITH* AND R. H. K. FOSTER. *Dept. of Pharmacology, St. Louis Univ. School of Medicine, St. Louis, Mo.*

1183. Effect of an autonomic blocking agent on morphine hyperglycemia. E. F. KEITH,* B. DEBOER AND R. H. K. FOSTER. *Dept. of Pharmacology, St. Louis Univ. School of Medicine, St. Louis, Mo.*

1184. Antagonistic effect of N-allyl-normorphine on morphine-induced hyperglycemia. HOWARD L. ZAUDER (introduced by N. B. DREYER). *Dept. of Pharmacology, Univ. of Vermont College of Medicine, Burlington.*

1185. N-Allylnormorphine in treatment of methadone poisoning in man. Report of two cases. H. F. FRASER,* ABRAHAM WIKLER, A. J. EISENMAN AND HARRIS ISBELL. *NIMH Addiction Research Center, U. S. Public Health Service Hospital, Lexington, Ky.*

1186. Action of salicylic acid on adrenal-pituitary system. GEORGE CRONHEIM, J. STANTON KING, JR.* AND NELTA HYDER.* *Research Dept., The S. E. Massengill Co., Bristol, Tenn.*

1187. Urinary metabolites of C^{14} salicylamide. H. GEORGE MANDEL,* VICTOR W. RODWELL* AND PAUL K. SMITH. *Dept. of Pharmacology, George Washington Univ. School of Medicine, Washington, D. C.*

1188. A method of measuring mild analgesia in man. G. A. DENEAU* AND C. W. GOWDEY. *Dept. of Pharmacology, Univ. of Western Ontario, Med. School, Canada.*

Renal Agents

WEDNESDAY, 9:00 A.M.—STATLER, PARLOR 1

Chairman: O. Bodansky

1189. Action of sodium fluoroacetate on renal excretion of para-amino-hippurate. GILBERT GRAHAM* AND ALFRED FARAH. *Dept. of Pharmacology, New York State College of Medicine, Syracuse.*

1190. Excretion of potassium by the chicken kidney. BARBARA RENNICK,* CLINTON LATIMER* AND GORDON MOE. *Dept. of Physiology, State Univ. of New York Med. Center, Syracuse, N. Y.*

1191. Failure to quantitatively account for infused inulin in human subjects. JULES H. LAST, RICHARD A. JONES,* GERALD O. MCDONALD* AND E. E. BOND.* *Dept. of Biochemistry, Northwestern Univ., and Research Service, Veterans Admin. Hospital, Hines, Ill.*

1192. Effects of histamine on renal functions. WILLIAM BLACKMORE AND T. R. SHERROD (introduced by C. C. PFEIFFER). *Dept. of Pharmacology, Univ. of Illinois Coll. of Medicine, Chicago.*

1193. Renal hemodynamics as effected by posture and by sympathoadrenal blockade. RALPH V. FORD* AND JOHN H. MOYER. *Depts. of Medicine and Pharmacology, Baylor Univ. College of Medicine and Veterans Admin. Hospital, Houston, Texas.*

1194. *In vitro* studies of renal secretion. VIRGIL D. WIEBELHAUS, ROBERT L. KEMP* AND KARL H. BEYER. *Pharmacology Sec., Research Div., Sharp and Dohme, Inc., West Point, Pa.*

1195. Influence of certain fluorinated fatty acids

on accumulation of *p*-amino-hippurate by rabbit kidney slice. ABEL M. DOMINGUEZ* AND F. E. SHIDEMAN. *Dept. of Pharmacology, Univ. of Michigan, Ann Arbor.*

1196. Influence of thiamine deficiency on the accumulation of *p*-aminohippurate (PAH) by rat kidney slice. DEAN A. LESHER* AND F. E. SHIDEMAN. *Dept. of Pharmacology, Univ. of Michigan, Ann Arbor.*

1197. Effect of mercurial diuretics on enzymes of the kidney. JOHN H. COPENHAVER* AND ANDRES GOTH. *Dept. of Pharmacology, Southwestern Med. School of the Univ. of Texas, Dallas.*

1198. Mechanism of inhibition of oxygen and PAH uptake of renal slices by a cyanine dye. LAWRENCE PETERS AND MARY L. WOEHRMANN.* *Dept. of Pharmacology, School of Medicine, Western Reserve Univ., Cleveland, Ohio.*

Shock—Histamine

WEDNESDAY, 9:00 A.M.—STATLER, PARLOR 2

Chairman: George L. Maison

1199. Effects of plasma substitutes in unilateral traumatic shock in cats. L. M. LUSKY* AND H. A. BRAUN. *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1200. Some cardiovascular and renal effects of norepinephrine and its use as a vasopressor agent in treatment of severe shock unresponsive to other therapeutic agents. JAMES A. SKELTON,* LEWIS C. MILLS* AND JOHN H. MOYER. *Depts. of Medicine and Pharmacology, Baylor Univ. College of Medicine, and Cardiac Clinic, Jefferson Davis Hosp., Houston, Tex.*

1201. Influence of chemotherapy on delayed deaths following extensive burns in mice. SANFORD M. ROSENTHAL, RALPH D. LILLIE AND ELIZABETH VERDER.* *Natl. Insts. of Health, Bethesda, Md.*

1202. Traumatic shock in mice. Comparison of therapy administered in single and divided doses. R. CARL MILLICAN AND SANFORD M. ROSENTHAL. *Natl. Insts. of Health, Bethesda, Md.*

1203. Modification by previous trauma and temperature of tolerance to tumbling shock in rats. WILLIAM C. NORTH* AND J. A. WELLS. *Dept. of Pharmacology, Northwestern Univ. Med. School, Chicago, Ill.*

1204. Dextran tolerance studies. J. N. SPENCER AND H. G. PAYNE.* *Pharmaceutical Research Div., Commercial Solvents Corp., Terre Haute, Ind.*

1205. Cardiovascular actions of adenyl compounds II. VIRGINIA L. SYDOW* AND RAYMOND P. AHLQUIST. *Med. College of Georgia, Augusta.*

1206. Adapted method for observing eosinophil changes in intact rats. ARTHUR E. HEMING, MARY F. SAX AND DORSEY E. HOLTKAMP (introduced by EDWIN J. FELLOWS). *Research and Development Div., Smith, Kline and French Labs., Philadelphia, Pa.*

1207. Distribution of histamine among blood elements. HELEN TREDWAY GRAHAM, FRANCES WHEELWRIGHT,* HAVNER H. PARISH, JR.,* ANCEL R. MARKS* AND OLIVER H. LOWRY. *Depts. of Pharmacology and Medicine, Washington Univ. School of Medicine, St. Louis, Mo.*

1208. Histamine release in human skin and effect of cortisone. JAMES HOLMAN* AND ANDRES GOTH. *Dept. of Pharmacology, Southwestern Med. School, Univ. of Texas, Dallas.*

1209. Histamine-thyroid-parathyroid-adrenal relationship. RAYMOND R. SACKLER (introduced by CO TUI). *Creedmoor Inst. for Psychobiologic Studies, New York City.*

1210. Toxicity of heated proteins. ANDRÉ SIMONART (introduced by ISAAC STARR). *Dept. of Pharmacology, Univ. of Louvain, Louvain, Belgium.*

Wednesday Afternoon, April 16, 1:15 p.m.

General Anesthetics

WEDNESDAY, 1:15 P.M.—STATLER, GEORGIAN ROOM

Chairman: Thomas C. Butler

1211. Duration of action and plasma level of Thiopental in nephrectomized animals. R. K. RICHARDS, J. D. TAYLOR,* J. DAVIN* AND K. E. KUETER.* *Dept. of Pharmacology, Abbott Labs., North Chicago, Ill.*

1212. *In vivo* and *in vitro* effects of morphine on brain thiobarbituric acid (TBA) values. S. IRWIN* AND F. E. SHIDEMAN. *Dept. of Pharmacology, Univ. of Michigan, Ann Arbor.*

1213. Effect of pentobaribital sodium on adrenalectomized rats. JAMES R. TUREMAN,* ARNOLD H. MALONEY, CLEO FROIX* AND WALTER M. BOOKER. *Dept. of Pharmacology, Howard Univ. Med. School, Washington, D. C.*

1214. Metabolic studies in infants and children during anesthesia. JOHN P. BUNKER,* WILLIAM R. BREWSTER,* ROBERT M. SMITH* AND HENRY K. BEECHER. *Anesthesia Lab.,*

Harvard Med. School at Massachusetts Gen. Hosp., Boston.

1215. Mechanism of production of metabolic acidosis and hyperglycemia during ether anesthesia in the dog. WILLIAM R. BREWSTER,* JOHN P. BUNKER* AND HENRY K. BEECHER. *Anesthesia Lab., Harvard Med. School at Massachusetts Gen. Hosp., Boston.*

1216. Electroencephalographic patterns and arterial ether concentrations: A correlation during anesthesia. ALBERT FAULCONER, JR. *Sec. of Anesthesiology and Intravenous Therapy, Mayo Clinic, Rochester, Minn.*

1217. Electrocardiographic changes during endotracheal intubation. R. T. CAPPS, A. M. MACKAY* AND O. S. ORTH. *Depts. of Pharmacology and Anesthesiology, Univ. of Wisconsin Med. School, Madison.*

1218. A new general anesthetic—isopropyl vinyl ether. GO LU, C. JELLEFF CARR, MARY JANE FASSEL* AND JOHN C. KRANTZ, JR. *Dept. of Pharmacology, Univ. of Maryland, School of Medicine, Baltimore.*

1219. Physiologic and biochemic changes during xenon anesthesia. C. B. PITTINGER,* S. C. CULLEN, R. M. FEATHERSTONE AND E. G. GROSS. *Div. of Anesthesiology of Dept. of Surgery and Dept. of Pharmacology State Univ. of Iowa College of Medicine, Iowa City*

1220. Observations of cardiac rhythm during ethyl chloride anesthesia in the dog. LUCIEN E. MORRIS, BRUNO HAID AND JOSEPH M. WHITE, JR. (introduced by STUART C. CULLEN). *Div. of Anesthesiology, State Univ. of Iowa College of Medicine, Iowa City.*

Diuretics—Antidiuretics

WEDNESDAY, 1:15 P.M.—STATLER, PARLOR 1

Chairman: Robert A. Woodbury

1221. Mechanism of inactivation of mercurial diuretics by BAL. REINHOLD BENESCH AND RUTH E. BENESCH (introduced by IRVING M. KLOTZ). *Dept. of Biochemistry Northwestern Univ. Med. School, Chicago, Ill.* (Biochem.)

1222. Detoxification of mercurial diuretics by polyhydroxy thiols. A. J. PLUMMER, WILLIAM REITZE* AND F. F. YONKMAN. *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

1223. Bioassay of mercurial diuretics by oral administration in cardiac patients with congestive failure. THEODORE GREINER, HARRY GOLD, LEON WARSHAW,* FRANK PALUMBO,* JOHN WEAVER,* SYDNEY MATHES* AND RAYMOND MARSH.* *Dept. of Pharmacology, Cornell Univ. Med. College, Cardiovascular Research Unit, Beth Israel Hosp., and Cardiology Service, Hosp. for Joint Diseases, New York City.*

1224. Depression of smooth muscle activity of small intestine of rabbit as a measure of organic mercurial toxicity. RICHARD RUTLEDGE,* WALTER BARRETT,* JEAN FEICKERT AND A. J. PLUMMER. *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

1225. Clinical diuretic studies on three new mercurial compounds. JOHN H. MOYER AND CARROLL A. HANDLEY. *Depts. of Medicine and Pharmacology, Baylor Univ. College of Medicine, Houston, Tex.*

1226. Mechanism of mercurial diuresis in hydropenic dogs. WILLIAM A. BRODSKY AND HARRY N. GRAUBARTH (introduced by P. K. KNOEFEL). *Dept. of Pediatrics, Inst. for Med. Research, Univ. of Louisville, Louisville, Ky., and Dept. of Pediatrics, Children's Hosp. Research Fndn., Univ. of Cincinnati, Cincinnati, O.*

1227. Some effects of mercurial diuretics on renal sodium excretion. ALFRED FARAH AND FLORENCE KODA.* *Dept. of Pharmacology, New York State College of Medicine, Syracuse.*

1228. Antidiuretic action of *l*-epinephrine. EARL H. DEARBORN AND LOUIS A. LASAGNA.* *Dept. of Pharmacology and Exptl. Therapeutics, Johns Hopkins Univ. School of Medicine, Baltimore, Md.*

1229. Influence of diethylstilbestrol and spaying on the antidiuresis following vasopressin. ROBERT W. GARDIER* AND ROBERT A. WOODBURY. *Div. of Pharmacology, Univ. of Tennessee, Memphis.*

1230. Urinary ammonia output in rat as affected by optically active forms of certain amino acids. ROBERT C. RATHBUN* AND F. E. SHIDEMAN. *Dept. of Pharmacology, Univ. of Michigan, Ann Arbor.*

Cholinesterase

WEDNESDAY, 1:15 P.M.—STATLER, PARLOR 2

Chairman: Sidney Ellis

1231. Toxicity of Malathon (0,0-dimethyl dithiophosphate of diethyl mercaptosuccinate). EMILY G. HOLLAND,* LLOYD W. HAZELTON AND DOROTHY L. HANZEL.* *Hazelton Labs., Falls Church, Va.*

1232. Lack of toxicity of parathion spray residue in orange peel and juice. CLINTON H. THIENES, ORSELL M. MEREDITH,* EDMUND PRESCOTT* AND JOHN PARSONS.* *Univ. of Southern Calif., School of Medicine, Los Angeles.*

1233. Vasodepression produced by an anti-cholinesterase agent. CARL W. BENDER,* B. P. MCNAMARA AND J. H. WILLS. *Pharmacology Branch, Chemical Corps Med. Labs., Army Chemical Center, Md.*

1234. Effect of EPN (ethyl *p*-nitrophenyl thionobenzenephosphonate) on human red blood cell cholinesterase. LEON HURWITZ AND VICTOR DISTEFANO (introduced by HAROLD C. HODGE). *Div. of Pharmacology and Toxicology, Univ. of Rochester, Rochester, N. Y.*

1235. Studies on tolerance to octamethyl pyrophosphoramide (OMPA). J. A. RIDER,* L. E. ELLINWOOD* AND J. M. COON. *Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1236. Effect of liver damage on toxicity of octamethyl pyrophosphoramide (OMPA). JOHN P. FRAWLEY,* EDWIN P. LAUG AND O. GARTH FITZHUGH. *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1237. Types of distributions of cholinesterases in rabbit. GEORGE B. KOELLE. *Dept. of Pharmacology, Columbia Univ., College of Physicians and Surgeons, New York City.*

1238. Comparison of the serum cholinesterases of man and horse. WERNER KALOW. *Dept. of Pharmacology, Univ. of Toronto, Toronto, Canada.*

1239. Relationship between cholinesterase inhibition and ganglionic transmission in cat. KAZUYA KAMIJO* AND GEORGE B. KOELLE. *Dept. of Pharmacology, Columbia Univ., College of Physicians and Surgeons, New York City.*

1240. Correlation between pharmacological responses to benzoylcholine and acetylcholine and cholinesterase activity. ALEXANDER G. KARCZMAR,* GUY C. SHEATZ* AND THEODORE KOPPANYI. *Dept. of Pharmacology, Georgetown Univ. Med. School, Washington, D. C.*

1241. Effects of DFP on muscarinic responses of benzoylcholine. THEODORE KOPPANYI, GUY C. SHEATZ* AND ALEXANDER G. KARCZMAR.* *Dept. of Pharmacology, Georgetown Univ. Med. School, Washington, D. C.*

Pharmacology Society Dinner

WEDNESDAY, 7:00 P.M.—HOTEL STATLER

Thursday Morning, April 17, 9:00 a.m.

Veratrum

THURSDAY, 9:00 A.M.—STATLER, GEORGIAN ROOM

Chairman: Robert P. Walton

1242. Response of essential hypertension to semi-purified extracts of veratrum viride (Veriloid), using oral and intramuscular routes of administration. IRA JOHNSON AND LEWIS C. MILLS (introduced by R. A. HUGGINS). *Cardiac Clinic, Jefferson Davis Hosp., Houston, Texas.*

1243. Influence of certain ganglionic blocking agents and veratramine upon epinephrine and norepinephrine-induced tachycardia in isolated feline heart. JAMES GOURZIS,* HAROLD COOMBS,* ANNE CAMERON* AND A. J. PLUMMER. *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

1244. Nodose ganglion as receptor site for emetic and vasodepressor actions of veratrum. HERBERT L. BORISON AND VIRGIL F. FAIRBANKS (introduced by LOUIS S. GOODMAN). *Dept. of Pharmacology, Univ. of Utah College of Medicine, Salt Lake City.*

1245. Mechanism of the hypotensive action of 'Veraloid.' CARL C. GRUHZIT* AND G. K. MOE. *Dept. of Physiology, State Univ. of New York Med. Center at Syracuse.*

1246. New alkaloids of veratrum. EDWARD D SWISS* AND GEORGE L. MAISON. *Dept. of Pharmacology, Boston Univ. School of Medicine, Boston, Mass.*

1247. Influence of anesthesia on hypotensive and bradycardic action of veratrum. CHARLES A. PAPACOSTAS,* CLIFTON F. MOUNTAIN,* GEORGE L. MAISON AND ROBERT O. BAUER.* *Dept. of Pharmacology, Boston Univ. School of Medicine, Boston, Massachusetts.*

1248. Pharmacological and chemical relation between veratrum alkaloids and zygadenus alkaloids. O. KRAYER, B. H. ROGERS,* S. M. KUPCHAN* AND C. V. DELIWALA.* *Dept. of Pharmacology, Harvard Med. School, and Dept. of Chemistry, Harvard Univ., Boston, Mass.*

1249. Action of veratramine and of sympathomimetic amines upon automaticity of atrioventricular node. R. B. ARORA,* E. MEILMAN* AND O. KRAYER. *Dept. of Pharmacology, Harvard Med. School, Boston, Mass.*

1250. Antagonistic action to cardioaccelerator effect of ephedrine, synephrine, isuprel, tuamine and oenethyl. P. OURISSON* AND O. KRAYER. *Dept. of Pharmacology, Harvard Med. School, Boston, Mass.*

1251. Biological and physico-chemical methods in standardization of veratrum ester alkaloids. FLOYD R. SKELTON, MARJORIE BECK AND GORDON A. GRANT (introduced by R. A. WAUD). *Research and Biological Labs., Ayerst, McKenna and Harrison, Ltd., Montreal, Canada.*

Autonomic I

THURSDAY. 9:00 A.M.—STATLER, PARLOR 1

Chairman: Harvey B. Haag

1252. Effect of nicotine on production of peptic ulcers in dogs. KWANG SOO LEE* AND CHARLES M. GRUBER, JR. *Dept. of Pharmacology, Jefferson Med. College, Philadelphia, Pa.*

1253. Observations on detoxication of nicotine by tissue slices. ARCHIE W. MILLER* AND P. S. LARSON. *Dept. of Pharmacology, Med. Coll. of Virginia, Richmond.*

1254. Action of adrenergic blocking agents on nicotine-induced tremors. RAYMOND L. CAHEN AND JOAN M. THOMAS.* *Maltbie Labs., Morristown, N. J.*

1255. Effect of N,N dimethyl 4-piperidylidene 1,1-diphenylmethane methyl sulfate (Prantal) on insulin induced gastric secretion in subjects with duodenal ulcer. ALEXANDER C. BAYER AND SARAH BRADFORD (introduced by HARVEY B. HAAG). *McGuire Veterans Admin. Hosp., Richmond, Va.*

1256. Interrelation of autonomic ganglionic effects of hexamethylene-bis-trimethyl ammonium (C6) and tetraethylammonium (TEA). STEWART C. HARVEY, JOHN L. BAUKOL,* GWYLLUM BLASER,* FRED W. HEATON* AND LAMAR H. STEWART.* *Dept. of Pharmacology, Univ. of Utah, Salt Lake City.*

1257. Studies on bis quaternary aliphatic compounds. A. M. KUNKEL,* A. H. OIKEMUS* AND J. H. WILLS. *Pharmacology Branch, Chemical Corps Med. Labs., Army Chemical Center, Md.*

1258. Pharmacology of a four-armed aliphatic methonium compound, tetrakis-(dimethylaminomethyl)-methane tetramethobromide. C. J. KENSLER AND H. LANGEMANN. *Dept. of Pharmacology, Cornell Univ. Med. College, New York City.*

1259. Cerebral circulatory and metabolic changes following intramuscular hexamethonium bromide (C-6) in subjects with severe hyper-

tensive retinopathy. C. W. CRUMPTON,* Q. R. MURPHY, J. J. WHITMORE,* R. T. CAPPS AND O. S. ORTH. *Depts. of Medicine, Pharmacology, and Physiology, Univ. of Wisconsin Med. School, Madison.*

1260. Action of atropine on sympathetic ganglia. KRISTEN M. TVEDE* AND RAYMOND L. CAHEN. *Maltbie Labs., Morristown, N. J.*

1261. Attempts to prevent or reduce radiation injury by pharmacological means. JOHN L. GRAY,* ELIZABETH J. MOULDEN,* JOHN T. TEW* AND H. JENSEN. *Army Med. Research Lab., Fort Knox, Ky.*

1262. Effect of acetyl-beta-methylcholine, carbamylcholine and atropine on survival of x-irradiated mice. W. T. BURNETT, JR., A. W. BURKE, JR. AND A. C. UPTON (introduced by H. D. BRUNER). *Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

1263. Antimuscarinic and antinicotinic actions of Toluidine Blue and Neutral Red in intestine. JAMES L. LEITCH* AND THOMAS J. HALEY. *Atomic Energy Project, Univ. of California at Los Angeles, School of Medicine, Los Angeles.*

Cortisone: Miscellaneous

THURSDAY, 9:00 A.M.—STATLER, PARLOR 2

Chairman: George Sayers

1264. Effect of adrenocorticotrophic hormone on blood glucose and insulin hypoglycemia. SAUL B. APPEL,* JOSEPH L. GLUCK,* STANLEY REICHMAN,* ALFRED MILLER,* ABRAHAM GOLDMAN,* CHARLOTTE SPRINGER,* AUSTIN A. SCHLECKER,* MILTON B. ROSENBLUTH* AND HERBERT S. KUPPERMAN. *Third (New York Univ.) Med. Div., Goldwater Mem. Hosp., and Dept. of Therapeutics, New York Univ.-Bellevue Med. Center, New York City.*

1265. Technical factors influencing permeability of synovial membrane. JOSEPH SEIFTER, DAVID H. BAEDER* AND ALBERT BLUMENTHAL.* *Wyeth Inst. of Applied Biochemistry, Wyeth, Inc., Philadelphia, Pa.*

1266. Effect of hyaluronidase on inflammatory response to primary irritants. JEROME M. GLASSMAN,* ALBERT BLUMENTHAL,* WILLIAM J. BECKFIELD* AND JOSEPH SEIFTER. *Wyeth Inst. of Applied Biochemistry, Wyeth, Inc., and Grad. School of Medicine, Univ. of Pennsylvania, Philadelphia.*

1267. Effect of cortisone and 21-acetoxypregnenolone on experimental arthritis. ALPHONSE DERVINIS,* JOSEPH SEIFTER AND WILLIAM E. EHRICH. *Wyeth Inst. of Applied Biochemistry, Wyeth, Inc., Philadelphia General Hosp. and Grad. School of Medicine, Univ. of Pennsylvania, Philadelphia.*

1268. Study of enzyme system involved in oxidation of carbon-21 in steroids. JOHN E. PLAGER* AND LEO T. SAMUELS. *Dept. of Biochemistry, Univ. of Utah College of Medicine, Salt Lake City.*

1269. Estimation of posterior pituitary activity in commercial preparations of ACTH. WILLIAM D. HARKNESS, STANLEY E. SRENSEK AND GEOFFREY WOODARD (introduced by BERT J. VOS). *Div. of Pharmacology, Food and Drug Admin., Washington, D. C.*

1270. Effects of intraarticular cortisone and hydrocortisone in rheumatoid arthritis. M. ZIFF, E. SCULL AND J. J. BUNIM (introduced by A. C. DEGRAFF). *Dept. of Medicine, New York Univ. College of Medicine, New York City.*

1271. Mechanism of action of cortisone in experimental hypersensitivity. ANDRES GOTH, JAMES HOLMAN* AND JOHN H. COPENHAVER.* *Dept. of Pharmacology, Southwestern Med. School, Univ. of Texas, Dallas.*

1272. Some pharmacological aspects of phenylbutazone(Butazolidin T. M.), a new antirheumatic. R. DOMENJOZ (introduced by CHARLES M. GRUBER, SR.). *Dept. of Pharmacological Research, J. R. Geigy Ltd., Basle, Switzerland.*

1273. Clinical study of prolonged anticoagulant effect with repository butacaine-heparin. TED A. LOOMIS AND J. E. JESSEPH.* *Dept. of Pharmacology, Univ. of Washington, Seattle.*

1274. Absorption, distribution and activity of Tromexan. CHARLES M. GRUBER, JR., KWANG SOO LEE* AND FREDRIC RIEDERS.* *Dept. of Pharmacology, Jefferson Med. College, Philadelphia, Pa.*

1275. Metabolic fate of Tromexan in man. J. J. BURNS,* MURRAY WEINER,* SHIRLEY WEXLER* AND BERNARD B. BRODIE. *New York Univ. Research Service, Goldwater Mem. Hosp., New York City, and Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

Thursday Afternoon, April 17, 1:15 p.m.

Muscle

THURSDAY, 1:15—STATLER, GEORGIAN ROOM

Chairman: Walter F. Riker, Jr.

1276. Effect of exercise on curarization. JOHN L. SCHMIDT,* HAROLD F. CHASE AND GOVENOR WITT.* *Dept. of Pharmacology, Western Reserve Univ., and Dept. of Pharmacology, Abbott Labs., North Chicago, Ill.*

1277. Curare compounds. XIV. Metabolism of carbon-14 labelled d-tubocurarine dimethylether in rats. DAVID F. MARSH. *Dept. of Pharmacology, West Virginia Univ., Morgantown.*

1278. Response of patients with myasthenia gravis to tubocurarine and decamethonium. E. W. PELIKAN,* J. E. TETHER* AND K. R. UNNA. *Dept. of Pharmacology, Univ. of Illinois College of Medicine, Chicago, and Dept. of Medicine, Indiana Univ. Med. Center, Indianapolis.*

1279. Production of controlled neuromuscular block by infusion of diacetylcholine. A. LLOYD WNUCK,* STATA NORTON,* C. H. ELLIS* AND E. J. DE BEER. *Wellcome Research Labs., Tuckahoe, N. Y.*

1280. Influence of alkyl substitution in the onium nitrogen centers of Mytolon®. JAMES O. HOPPE AND A. ARNOLD.* *Pharmacology Sec., Sterling-Winthrop Research Inst., Rensselaer, N. Y.*

1281. Mytolon® and related compounds as antagonists of acetylcholine on the *Venus* heart. F. P. LUDUENA AND T. G. BROWN, JR.* *Pharmacology Sec., Sterling-Winthrop Research Inst., Rensselaer, N. Y.*

1282. Tensilon®-reversible curare agents. LOWELL O. RANDALL. *Pharmacology Dept., Hoffmann-La Roche, Inc., Nutley, N. J.*

1283. Central depression by drugs which block neuromuscular transmission. C. H. ELLIS, STATA NORTON* AND WALLER V. MORGAN.* *Wellcome Research Labs., Tuckahoe, N. Y.*

1284. Effectiveness of anti-curarizing agents at different frequencies of stimulation. E. F. VAN MAANEN. *Pharmacology Dept., Univ. of Cincinnati College of Medicine, Cincinnati, Ohio.*

1285. Increase of post-tetanic facilitation in cat's soleus by ephedrine and yohimbin. TSUNG-HAN LI. *Dept. of Pharmacology, Harvard Med. School, Boston, Mass.*

1286. Electrical activity of the small intestine and its modification by certain drugs. DUNCAN A. HOLADAY, HERBERT VOLK AND JULIAN MANDEL (introduced by E. M. PAPPER). *Depts. of Anesthesiology, Surgery and Radiology, Columbia Univ. College of Physicians and Surgeons, New York City.*

Drug Enzymology

THURSDAY ,1:15 P.M.—STATLER, PARLOR 1

Chairman: James A. Bain

1287. Oxidation of aromatic drugs by ascorbic acid, oxygen, and ferrous iron. BERNARD B. BRODIE, PARKHURST A. SHORE,* JULIUS AXELROD* AND SIDNEY UDENFRIEND.* *Sec. on Chemical Pharmacology, Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

1288. Effect of ascorbic acid on oxidation of aromatic drugs in the body. JULIUS AXELROD,* BERNARD B. BRODIE AND SIDNEY UDENFRIEND.* *Sec. on Chemical Pharmacology, Natl. Heart Inst., Natl. Insts. of Health, Bethesda, Md.*

1289. Autonomic drugs and liver slices. SYDNEY ELLIS AND HILTON L. ANDERSON.* *Dept. of Pharmacology, Temple Univ. School of Medicine, Philadelphia, Pa.*

1290. Determination of activity of arterial adenosine triphosphatase. C. JELLEFF CARR, FREDERICK K. BELL* AND JOHN C. KRANTZ, JR. *Dept. of Pharmacology, Univ. of Maryland School of Medicine, Baltimore.*

1291. Oxygen uptake and ATPase activity of heart and arterial tissue. RUTH MUSSER,* JOHNSON LING* AND JOHN C. KRANTZ, JR. *Dept. of Pharmacology, Univ. of Maryland School of Medicine, Baltimore.*

1292. Influence of nitrogen mustards on citric acid synthesis. KENNETH P. DUBOIS AND KENNETH W. COCHRAN.* *USAF. Radiation Lab. and Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1293. Inhibitory action of steroid hormones on citrate synthesis *in vitro*. KENNETH W. COCHRAN* AND KENNETH P. DUBOIS. *USAF Radiation Lab. and Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1294. Effect of alloxan administration on liver DNA (desoxyribose nucleic acid). H. F. DIERMEIER,* H. S. DISTEFANO* AND A. D. BASS. *Depts. of Pharmacology and Anatomy, New York State College of Medicine at Syracuse.*

1295. Synthesis of glucuronic acid. THOMAS G.

BIDDER (introduced by LAWRENCE PETERS). *Dept. of Pharmacology, Western Reserve Univ. School of Medicine, Cleveland, O.*

Metabolism—Thyroid

THURSDAY, 1:15 P.M.—STATLER, PARLOR 2

Chairman: Leon H. Schmidt

1296. Use of the amenorrhea and menopausal index in clinical evaluation of estrogenic compounds. HERBERT S. KUPPERMAN, MEYER BLATT,* HANS WIESBADER* AND SAKI TOGASHI.* *Depts. of Therapeutics and Obstetrics and Gynecology, New York Univ. College of Medicine, and Obstetrical Gynecological Service (III Div.), Bellevue Hosp., New York City.*

1297. Estrogenic action of DDT and some analogues. ALLAN L. FISHER,* HUGH H. KEASLING* AND F. W. SCHUELER. *Dept. of Pharmacology, State Univ. of Iowa College of Medicine, Iowa City.*

1298. Mechanism of bile formation in isolated perfused liver: origin of major inorganic constituents of bile. GEORGE F. LEONG, R. W. BRAUER AND J. S. KREBS. *Pharmacology Branch, Biol. and Med. Sciences Div., USN Radiological Defense Lab., San Francisco, Calif.*

1299. Effect of liver on blood levels of 17-hydroxycorticosteroids in dog. DON H. NELSON AND BOYD HARDING (introduced by LEO T. SAMUELS). *Dept. of Biochemistry, Univ. of Utah, College of Medicine, Salt Lake City.* (Biochem.)

1300. Experimental diabetogens: structure-response studies of styrylquinolinium compounds. HARRY K. IWAMOTO AND C. JELLEFF CARR. *Dept. of Pharmacology, Schools of Pharmacy and Medicine, Univ. of Buffalo, Buffalo, N. Y., and Dept. of Pharmacology, Univ. of Maryland School of Medicine, Baltimore.*

1301. Hepatic and renal copper content in experimental diabetes. EDWARD PEDRERO, JR.* AND F. L. KOZELKA. *Dept. of Pharmacology and Toxicology, Univ. of Wisconsin Med. School, Madison.*

1302. Effect of nitrogen mustard on alloxan diabetes. FRANK M. STURTEVANT, JR.,* FRANCIS J. SAUNDERS* AND D. M. GREEN. *Div. of Biological Research, G. D. Searle and Co., Chicago, Ill.*

1303. Intravenous choline therapy. F. STEIGMANN, R. FIRESTEIN* AND J. DE LA HUERGA.* *Hektoen Inst. for Med. Research of Cook County Hosp. and Dept. of Internal Medicine, Univ. of Illinois College of Medicine, Chicago.*

1304. Effects of intravenous infusion of potassium on liver glycogen. R. A. SEIBERT,* R. A. HUGGINS AND R. SAXTON.* *Dept. of Pharmacology, Baylor Univ. College of Medicine, Houston, Texas.*

1305. Some blood component relationships in mental patients following exercise. O. D. EASTERDAY.* R. M. FEATHERSTONE, J. S. GOTTLIEB* AND R. V. HOGG.* *Depts. of Pharmacology, Psychiatry, and Mathematics, State Univ. of Iowa, Iowa City.*

1306. An improved method for determination of 5-iodo, 2-thiouracil (Itrumil) in blood. GILMOUR WAGLE* AND A. J. PLUMMER. *Research Labs., Ciba Pharmaceutical Products, Inc., Summit, N. J.*

1307. Toxicological studies on zinc and disodium salts of ethylene bisdithiocarbamate (Dithanes Z 78 and D14®). R. BLACKWELL SMITH, JR., J. K. FINNEGAN, P. F. SAHYOUN,* H. B. HAAG AND P. S. LARSON. *Depts. of Pharmacology and Surgery, Med. College of Virginia, Richmond.*

1308. Failure of excess vitamin B_{12} in influencing metabolic and toxic effects of thyroid U.S.P. XIV. JOHN DALE ARCHER,* JOE B. NASH,* ROBERT G. BROWN* AND GEORGE A. EMERSON. *Univ. of Texas Med. Branch, Galveston*

Pharmacology Society Business Meeting

THURSDAY, 4:00 P.M.—STATLER, PENN TOP SOUTH

Friday Morning, April 18, 9:00 a.m.

Autonomic II

FRIDAY, 9:00 A.M.—STATLER, GEORGIAN ROOM

Chairman: J. W. Stutzman

1309. Determination of sympathetic mediator in various species. BERNARD L. MIRKIN* AND DESMOND D. BONNYCASTLE. *Dept. of Pharmacology and Toxicology, Yale Univ. School of Medicine, New Haven, Conn.*

1310. Enzyme inhibition as a cause of sensitization of vessels to the vasoconstrictor action of epinephrine. GEORGE C. COTZIAS, THEODORE BALOURDAS AND VINCENT P. DOLE introduced by A. E. COHN). *Hosp. of Rockefeller Inst. for Med. Research and Dept. of Biology, New York Univ., New York City.*

1311. N-Phenacyl-N-(β-cyanoethyl)-piperidinium bromide: a material which potentiates the pressor response of epinephrine. KENNETH LAMPE* AND F. W. SCHUELER. *Dept. of Pharmacology, State Univ. of Iowa, Iowa City.*

1312. Influence of the posterior pituitary on the pressor action of epinephrine. G. W. STAVRAKY AND R. J. OLIVER.* *Dept. of Physiology, Univ. of Western Ontario, London, Canada.*

1313. Loss of pharmacologic effects of x-rayed epinephrine solutions. JAMES E. WILSON,* L. E. ELLINWOOD* AND J. M. COON. *USAF Radiation Lab. and Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1314. Influence of certain inorganic ions on epinephrine action. EDWARD LARSON, MARK F. WYNN* AND JOSEPH P. ADAMS, JR.* *Dept. of Physiology and Pharmacology, Univ. of Miami Med. Research Unit, Veterans Administration Hosp., Coral Gables, Fla.*

1315. Intravenous vs. intra-aortic epinephrine. RAYMOND P. AHLQUIST. *Med. College of Georgia, Augusta.*

1316. Intravenous infusion studies in dogs with epinephrine and *l*-arterenol. JESSE I. GRANT* AND A. M. LANDS. *Pharmacology Section, Sterling-Winthrop Research Inst. Rensselaer, N. Y.*

1317. Vasodepressor effects of epinephrine and arterenol in cerebral perfusion. J. BAYARD BRITTON* AND RAYMOND P. AHLQUIST. *Med. College of Georgia, Augusta.*

1318. Phenoxyalkyltrimethylammonium derivatives with pressor activity. W. E. HAMBOURGER, LAURIE ANN MURRAY* AND DEANE A. HOULAHAN.* *Div. of Biological Research, G. D. Searle & Co., Chicago, Ill.*

1319. Factors influencing post-DCA hypertension. D. M. GREEN, F. J. SAUNDERS* AND NANCY WAHLGREN.* *Div. of Biological Research, G. D. Searle & Co., Chicago, Ill.*

1320. Polarizing forces of the muscarinic moiety. F. W. SCHUELER, *Dept. of Pharmacology, State Univ. of Iowa, Iowa City.*

1321. Interaction of polarizing forces with inductive effects in the muscarinic moiety. HUGH H. KEASLING,* F. W. SCHUELER AND KENNETH LAMPE.* *Dept. of Pharmacology, State Univ. of Iowa College of Medicine, Iowa City.*

Local Anesthetics

FRIDAY, 9:00 A.M.—STATLER, PARLOR 1

Chairman: Raymond N. Bieter

1322. Local anesthetic activity of some substituted glycinamides. DONALD K. ECKFELD,* ALBERT J. BEGANY,* JEROME M. GLASSMAN* AND JOSEPH SEIFTER. *Wyeth Inst. of Applied Biochemistry, Wyeth Inc., Philadelphia, Pa.*

1323. Effect and distribution of local anesthetics in the normal and desheathed nerve. A. P. TRUANT AND VINCENT LANZONI (introduced by BYRON B. CLARK). *Pharmacology Dept., Tufts College Med. School, Boston, Mass.*

1324. Parasympatholytic and vagolytic actions of synthetic local anesthetics. BENJAMIN CALESNICK AND N. H. SMITH.* *Dept. of Pharmacology, Hahnemann Med. College, Philadelphia, Pa.*

1325. Sympathomimetic effects during high spinal anesthesia. J. A. RICHARDSON AND R. P. WALTON. *Dept. of Pharmacology, Med. College of South Carolina, Charleston.*

1326. Effect of pre-incubation on the inhibitory effect of neostigmine and dimethyl-carbamate of (2-hydroxy-5-phenylbenzyl) trimethylammonium bromide (RO2-683) on the enzymatic hydrolysis of procaine. MANUEL AVEN, DAVID L. DAVIS AND FRANCIS F. FOLDES (introduced by L. O. RANDALL). *Dept. of Anesthesia, Mercy Hosp., and Dept. of Surgery, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1327. Effect of various stigmine type compounds on the enzymatic hydrolysis of procaine in plasma. DAVID L. DAVIS AND FRANCIS F. FOLDES (introduced by L. O. RANDALL). *Dept. of Anesthesia, Mercy Hosp., and Dept. of Surgery, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1328. Fate of procaine and 2-chloroprocaine in the subarachnoid space. FRANCIS F. FOLDES, ROBERT D. HUNT AND DAVID L. DAVIS (introduced by L. REINER). *Dept. of Anesthesia, Mercy Hosp., and Dept. of Surgery, Univ. of Pittsburgh School of Medicine, Pittsburgh Pa.* (Biochem.)

1329. Local anesthetic studies with procaine and xylocaine. PAUL E. TULLAR (introduced by HERBERT A. BRAUN). *Dept. of Pharmacology, Univ. of Texas Dental Branch, Houston.*

1330. Micromethod for the colorimetric determination of tetracaine. M. E. AUERBACH, DAVID L. DAVIS AND FRANCIS F. FOLDES (introduced by M. L. TAINTER). *Sterling-Winthrop Research Inst., Rensselaer, N. Y., and Dept. of Anesthesia, Mercy Hosp., Pittsburgh, Pa.*

Alcohol—Chemotherapy

FRIDAY, 9:00 A.M.—STATLER, PARLOR 2

Chairman: Lauren A. Woods

1331. Conversion of ethanol to acetaldehyde *in vitro*. T. N. BURBRIDGE,* V. C. SUTHERLAND* AND CHARLES H. HINE. *Div. of Pharmacology and Experimental Therapeutics, Univ. of California, San Francisco.*

1332. Effect of tetraethylthiuram disulfide on toxicity of ethanol and acetaldehyde. GEORGE P. CHILD, MALCOLM CRUMP* AND PETER LEONARD.* *Dept. of Physiology and Pharmacology, Albany Med. College, Albany, N. Y.*

1333. Factors affecting potentiation of barbiturate action by tetraethylthiuram disulfide. W. DONALD GRAHAM, H. TEED AND M. G. ALLMARK (introduced by F. C. LU). *Food and Drug Labs., Dept. of Natl. Health and Welfare, Ottawa, Canada.*

1334. Chronic toxicity of Antabuse (tetraethylthiuramdisulfide). O. G. FITZHUGH, W. J. WINTER* AND A. A. NELSON.* *Div. of Pharmacology, Food and Drug Administration and Veterans Administration, Washington, D. C.*

1335. Effect of *dl*-amphetamine (Benzedrine sulfate, S.K.F. Labs.) on voluntary choice of ethanol by albino rats. WILLIAM T. MOORE,* BERNICE M. MOORE,* JOE B. NASH* AND G. A. EMERSON. *Univ. of Texas Med. Branch, Galveston, Texas.*

1336. Effect of anosmia on voluntary choice of dilute ethanol by albino rats. JOE B. NASH,* WILLIAM T. MOORE,* BERNICE M. MOORE* AND G. A. EMERSON. *Univ. of Texas Med. Branch, Galveston.*

1337. Correlation of psychologic tests and achievement records with speed of visual accommodation in man. RANDOLPH CLEMENTS,* JOHN DALE ARCHER,* ROBERT G. BROWN* AND G. A. EMERSON. *Univ. of Texas Med. Branch, Galveston.*

1338. Chloramphenicol palmitate, a synthetic ester of chloramphenicol. A. J. GLAZKO, W. H. EDGERTON,* W. A. DILL* AND W. R. LENZ.* *Research Labs., Parke, Davis and Co., and The Herman Kiefer Hosp., Detroit, Mich.* (Physiol.)

1339. Effect of drugs on oxygen consumption of virus infected tissue cultures. JULIAN L. AMBRUS, CLARA M. AMBRUS, CATHERINA N. SIDERI AND J. W. E. HARRISSON (introduced by I. T. BECK). *Dept. of Pharmacology and Biochemistry, Philadelphia College of Pharmacy and Science, Philadelphia, Pa.*

1340. Effect of natural metabolites on the in vitro activity of certain antimalarials. JOSEPH GREENBERG, EDWARD S. JOSEPHSON, AND D. JANE TAYLOR (introduced by S. M. ROSENTHAL). *Natl. Microbiological Inst., Natl. Insts. of Health, Bethesda, Md.*

1341. Relation of dosage schedule to efficacy of terramycin. LOUIS LASAGNA AND C. G. ZUBROD (introduced by E. K. MARSHALL, JR.). *Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins School of Medicine, Baltimore, Md.*

1342. Relation of 'chloramphenicol reductase' activity to chloramphenicol resistance in *Escherichia coli*. JOSEPH R. MERKEL AND EDWARD STEERS (introduced by C. JELLEFF CARR). *Dept. of Bacteriology, Univ. of Maryland School of Medicine, Baltimore, Md.*

Friday Afternoon, April 18, 1:15 p.m.

Autonomic III

FRIDAY, 1:15 P.M.—STATLER, GEORGIAN ROOM

Chairman: Mark Nickerson

1343. D.C. electromagnetic flow meter for measurement of mean blood flow. R. R. ROEPKE,* J. T. LITCHFIELD, JR., AND E. M. BAILEY.* *Stamford Research Labs., American Cyanamid Co., Stamford, Conn.*

1344. Distribution and excretion of radioactivity in rats injected with C^{14} labeled Priscoline-HCl. B. CENTURY,* L. E. ELLINWOOD,* J. D. KOHLI* AND J. M. COON. *Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1345. Effect of Dibenzyline (SKF 688A) on peripheral blood flow in man. D. J. WOODWARD,* S. W. HOOBLER* AND MARK NICKERSON. *Depts. of Medicine and Pharmacology, Univ. of Michigan School of Medicine, Ann Arbor.*

1346. Epinephrine and arterenol cutaneous vaso-

constriction and adrenergic blockade. JAMES P. TAYLOR* AND RAYMOND P. AHLQUIST. *Med. College of Georgia, Augusta.*

1347. Effect of dibenamine on response of arterial smooth muscle to epinephrine, norepinephrine, electrical stimulation and anoxia. ROBERT F. FURCHGOTT. *Pharmacology Dept., Washington Univ. School of Medicine, St. Louis, Mo.* (Biochem.)

1348. Pharmacodynamic studies on Regitine, a new adrenergic blocking drug (Ciba 7337) 2-[N-p′-tolyl-N-(m′-hydroxyphenyl)-aminomethyl] imidazoline. GWEN ROBERTS,* ALFRED W. RICHARDSON* AND HAROLD D. GREEN. *Depts. of Physiology and Pharmacology, Bowman Gray School of Medicine, Winston-Salem, N. C.*

1349. Vasodilator and adrenergic blocking action of 6-allyl-6,7-dihydro-5-dibenz [c,e] azepine phosphate (Ro 2-3248). PAUL E. MOORE,* ALFRED W. RICHARDSON* AND HAROLD D. GREEN. *Dept. of Physiology and Pharmacology, Bowman Gray School of Medicine, Winston-Salem, N. C.*

1350. The effect of adrenergic blocking agents on ether hyperglycemia in rabbits. D. T. WATTS. *Dept. of Pharmacology, Univ. of Virginia Med. School, Charlottesville.*

1351. Observations on the bronchodilator activity of visammin (khellin). FRED W. ELLIS. *Dept. of Pharmacology, Univ. of North Carolina School of Medicine, Chapel Hill.*

1352. Circulatory effects of N-ethyl-3-piperidyl-diphenylacetate hydrochloride. PAUL L. EWING AND LLOYD D. SEAGER. *Dept. of Pharmacology, College of Pharmacy, and Dept. of Physiology and Pharmacology, Univ. of Arkansas School of Medicine, Little Rock.*

1353. Antispasmodic activity of a series of benzoyl cyclo-carboxylic acid esters of diethylaminoethanol. BYRON B. CLARK, ELIZABETH GRACE,* RUTH MITCHELL* AND MURRAY BLAIR.* *Pharmacology Dept., Tufts College Med. School, Boston, Mass.*

1354. Antihistaminic drugs in treatment of postgastrectomy dumping syndrome. EMANUEL STEIN (introduced by MICHAEL G. MULINOS). *New York City.*

Bioassay—Miscellaneous

FRIDAY, 1:15 P.M.—STATLER, PARLOR 1

Chairman: William T. Salter

1355. A comparative study of the USP XIV colorimetric assay and the USP XIII pigeon method in the assay of digitoxin. HERBERT A. BRAUN AND L. M. LUSKY.* *Div. of Pharmacology, Food and Drug Adm., Fed. Sec. Agency, Washington, D. C.*

1356. Studies on the potency and persistence of effect of several digitalis preparations in pigeons. HARVEY B. HAAG AND SALLY WOMACK.* *Dept. of Pharmacology, Med. College of Virginia, Richmond.*

1357. Toxicity of ANTU for the rat and its lack of dependence upon body weight. DAVID P. RALL AND WILLIAM C. NORTH (introduced by C. A. DRAGSTEDT). *Northwestern Univ. Med. School, Chicago, Ill.*

1358. Dose response curves for the pressor effects of pure *l*-norepinephrine, *l*-epinephrine, and a commercial epinephrine. ROBERT V. BROWN. *Div. of Pharmacology, Univ. of Tennessee, Memphis.*

1359. Interrelation of drugs, ions and metabolism in uterine muscular activity. EDWIN E. DANIEL (introduced by LOUIS S. GOODMAN). *Dept. of Pharmacology, Univ. of Utah College of Medicine, Salt Lake City.*

1360. Interrelation of receptors for histamine and epinephrine in uterine smooth muscle. KAYE H. KILBURN, ABDULLAH A. ASADI, ALVIN C. MCCUISTION, RICHARD E. NILSSON AND EDWIN E. DANIEL (introduced by STEWART C. HARVEY). *Dept. of Pharmacology, Univ. of Utah College of Medicine, Salt Lake City.*

1361. Unusual effects of autonomic drugs on blockade of epinephrine and histamine responses in uterine strips from progesterone-treated cats. RICHARD E. NILSSON, ALVIN C. MCCUISTION, ABDULLAH A. ASADI, KAYE H. KILBURN AND EDWIN E. DANIEL (introduced by STEWART C. HARVEY). *Dept. of Pharmacology, Univ. of Utah College of Medicine, Salt Lake City.*

1362. Adaptation of the uterine musculature of rabbits to vasopressin. JAMES G. HILTON* AND ROBERT A. WOODBURY. *Div. of Pharmacology, Univ. of Tennessee, Memphis.*

1363. Effect of quantity of carrier gallium on the distribution of metal in rats. H. D. BRUNER, JESSE D. PERKINSON, JR.* AND R. L. HAYES.* *Oak Ridge Inst. of Nuclear Studies, Oak Ridge, Tenn.*

1364. Chemistry, pharmacology and oncolytic effect of the high molecular weight fraction isolated from podophyllin. MURIEL R. LORAN AND ABE TOWBIN (introduced by ALFRED GILMAN). *College of Pharmacy and Dept. of Pathology, Ohio State Univ., Columbus.*

1365. Effect of tumors on distribution of radioactive colchicine. A. BACK AND E. J. WALASZEK (introduced by E. M. K. GEILING). *Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1366. Effect of colchicine on frog skeletal muscle. FRANK C. FERGUSON, JR. *Dept. of Pharma-*

cology, Cornell Univ. Med. College, New York City.

PAPERS READ BY TITLE

1367. Electrical action of drugs as cause of their depressant or stimulant effect. REINHARD H. BEUTNER. *New England College of Pharmacy, Boston, Mass.*

1368. Diparcol in nicotine poisoning. DONALD F. BOGDANSKI AND JOHN A. DATTOLI (introduced by THEODORE KOPPANYI). *Dept. of Pharmacology, Georgetown Univ. Med. School, Washington, D. C.*

1369. Further correlations of behavior with voluntary choice of alcohol in albino rats. ROBERT G. BROWN,* WILLIAM T. MOORE,* BERNICE M. MOORE* AND G. A. EMERSON. *Univ. of Texas Med. School, Galveston.*

1370. An empirical comparison of intra-test and inter-test error of the LD_{50}. LYLE D. CALVIN AND HOMER B. FREESE (introduced by W. E. HAMBOURGER). *Div. of Biological Research, G. D. Searle and Co., Chicago, Ill.*

1371. Excitement stage of barbiturate action. RALPH J. CAZORT. *Dept. of Pharmacology, Meharry Med. College, Nashville, Tenn.*

1372. Comparison of 11-hydroxy cardiac glycosides and aglycones with cortisone and compound F. K. K. CHEN, ROBERT C. ANDERSON* AND CHARLES L. ROSE.* *Lilly Res. Labs., Indianapolis, Ind.*

1373. Excretion and concentration of antibiotics in the bile. D. L. COOK,* COLETA A. LAWLER* AND D. M. GREEN. *Div. of Biological Research, G. D. Searle and Co., Chicago, Ill.*

1374. L-isomethadone and morphine analgesia: potentiation by dihydrogenated ergot alkaloids in the rat. NORMAN A. DAVID AND HERBERT J. SEMLER.* *Dept. of Pharmacology, Univ. of Oregon Med. School, Portland.*

1375. Paraphenylene-diamine anemia in rats. JOHN EMERSON DAVIS. *Univ. of Texas College of Pharmacy, Austin.*

1376. Gross tolerance to hyperglycemic effects of analgesic drugs. B. DE BOER, E. F. KEITH* AND L. WALTS.* *Dept. of Pharmacology, St. Louis Univ. School of Medicine, St. Louis, Mo.*

1377. Nutritional value of intravenous tapiaco dextrin. L. E. DETRICK,* A. E. LEWIS,* BONNIE RHODES* AND THOMAS J. HALEY. *Atomic Energy Project, Univ. of California School of Medicine, Los Angeles.*

1378. Inhibitory action of systox on cholinesterase. KENNETH P. DUBOIS, JERE A. DEROIN* AND ARTHUR J. OKINAKA.* *Dept. of Pharmacology, Univ. of Chicago, Chicago, Ill.*

1379. A morpholinium analogue of C_{10} and its antagonism by neostigmine. OTHO D. EASTERDAY,* CALVIN HANNA* AND F. W. SCHUELER. *Dept. of Pharmacology, State Univ. of Iowa, Iowa City.*

1380. Effect of salicylates on experimental beryllium poisoning. ASHER J. FINKEL AND MARCIA R. WHITE (introduced by NICHOLAS W. FUGO). *Argonne Natl. Lab., Chicago, Ill.*

1381. Curare compounds. XIII. The fate of carbon-14 labelled *d*-tubocurarine dimethylether in guinea pigs. D. A. HERRING* AND DAVID F. MARSH. *Dept. of Pharmacology, West Virginia Univ. School of Medicine, Morgantown.*

1382. Toxicity in rodents and anti-cholinesterase activity of organo-phosphorous compounds. C. H. HINE, E. R. SHACK,* J. K. KODAMA* AND M. S. MORSE.* *Div. of Pharmacology and Experimental Therapeutics, Univ. of California, San Francisco.*

1383. Effect of cortisone on pregnant ewes. LOUIS W. HOLM (introduced by S. ANDERSON PEOPLES). *School of Veterinary Medicine, Univ. of California, Davis.*

1384. Influence of the hypophysis on copper metabolism. F. L. KOZELKA AND EDWARD PEDRERO, JR.* *Dept. of Pharmacology and Toxicology, Univ. of Wisconsin Med. School, Madison.*

1385. Assay of purified extracts of veratrum viride based on the hypotensive effect in roosters. A. LAVALLEE, M. G. ALLMARK AND W. D. GRAHAM (introduced by F. C. LU). *Food and Drug Labs., Dept. of Natl. Health and Welfare, Ottawa, Canada.*

1386. Pharmacology of succinonitrile. DAVID I. MACHT. *Dept. of Pharmacology, Sinai Hospital, Baltimore, Md.*

1387. Urinary metabolites of C^{14} para-aminobenzoic acid. H. GEORGE MANDEL,* CHIANG-YING YEN* AND PAUL K. SMITH. *Dept. of Pharmacology, George Washington Univ. School of Medicine, Washington, D. C.*

1388. Biological studies with radioactive morphine. C. H. MARCH* AND H. W. ELLIOTT. *Div. of Pharmacology and Experimental Therapeutics, Univ. of California, San Francisco.*

1389. Drug effects on the metabolism of *Endamoeba histolytica*. MITSURU NAKAMURA* AND HAMILTON H. ANDERSON. *Div. of Pharmacology and Experimental Therapeutics, Univ. of California, San Francisco.*

1390. Hemodynamic effects of lidocaine solutions. MARK NAKAUCHI AND ALEXANDER G. KARCZMAR (introduced by EDWARD B. TUOHY). *Depts. of Oral Surgery and Pharmacology, Georgetown Univ. Med. and Dental Schools, Washington, D. C.*

1391. Effect of an adrenergic blocking compound

(Regitine) on the course of alloxan diabetes. JOHN NICHOLS* AND J. MAXWELL LITTLE. *Dept. of Physiology and Pharmacology, Bowman Gray School of Medicine, Winston-Salem, N. C.*

1392. Effect of hypophysectomy on DCA-induced hypertension in rats. F. J. SAUNDERS,* F. J. MCDONOUGH,* NANCY WAHLGREN* AND D. M. GREEN. *Div. of Biological Research, G. D. Searle and Co., Chicago, Ill.*

1393. Action of perimidine on the central nervous system. IRWIN H. SLATER AND D. E. LEARY.* *Divs. of Orthopedic Surgery and Pharmacology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

1394. Hemorrhagic shock. JOS. G. STRAWITZ,* W. C. LEE,* E. R. SCHMIDT* AND O. S. ORTH. *Depts. of Surgery and Pharmacology, Univ. of Wisconsin Med. School, Madison.*

1395. Effect of administration of adrenocorticotrophic hormone on acetylcholine content of the brain. CLARA TORDA AND HAROLD G. WOLFF. *Depts. of Med. (Neurology) and Psychiatry, New York Hosp. Cornell Med. Center, New York City.*

1396. Relationship of potassium to effects of phenobarbital on QO_2 of brain slices. B. A. WESTFALL. *Dept. of Physiol. and Pharmacology, Univ. of Missouri School of Medicine, Columbia.*

1397. Effects of morphine and N-allylnormorphine on reflexes in dog and cat. ABRAHAM WIKLER AND R. L. CARTER.* *N.I.M.H. Addiction Res. Center, U.S.P.H.S. Hosp., Lexington, Ky.*

1398. Effects of urethane and carbon tetrachloride on alkaline phosphatase (APH) activity of mouse livers. W. LANE WILLIAMS, RICHARD B. ARONSOHN AND RICHARD H. MEYER (introduced by R. N. BIETER). *Dept. of Anatomy, Univ. of Minnesota, Minneapolis.*

AMERICAN SOCIETY FOR EXPERIMENTAL PATHOLOGY

Thirty-seventh Annual Meeting

New York City, April 14–18, 1952

(An asterisk following an author's name indicates "by invitation")*

Tuesday Morning, April 15, 9:00 a.m.

Kidney

TUESDAY, 9:00 A.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: Sidney C. Madden

1399. Bi-phasic nature of renal calcification. LEWIS K. DAHL AND VINCENT P. DOLE (introduced by EUGENE L. OPIE). *Hosp. of the Rockefeller Inst. for Med. Research, New York City.*

1400. Histochemical localization of malic, isocitric and succinic dehydrogenases in the kidney. EMMANUEL FARBER,* WILLIAM H. STERNBERG* AND CHARLES E. DUNLAP. *Dept. Of Pathology, Tulane Univ., New Orleans, La.*

1401. Some chemical properties of nephrotoxic antigen. SEYMOUR A. GREENSPON,* FREDERICK W. BOLLINGER* AND CECIL A. KRAKOWER. *Dept. of Pathology, Univ. of Illinois, Chicago.*

1402. Localization of Na_{22} in the rat kidney. ROBERT B. JENNINGS AND JACOB S. KRAKUSIN (introduced by WILLIAM B. WARTMAN). *Depts. of Pathology and Biochemistry, Northwestern Univ. Med. School, Chicago, Ill.*

1403. Measurement of renal gluconeogenesis in dog. JESSE L. BOLLMAN AND JOHN H. GRINDLAY. *Mayo Fndn., Rochester, Minn.*

1404. Progressive renal disease in subtotally nephrectomized rats. L. J. RATHER. *Dept. of Pathology, Stanford Univ. School of Medicine, San Francisco, Calif.*

1405. Fat nephrosis produced by colchicine. STEPHEN S. STERNBERG* AND FRANK C. FERGUSON (introduced by FRED W. STEWART). *Pharmacology Section, Sloan-Kettering Inst. for Cancer Research, and Dept. of Pharmacology, Cornell Med. College, New York City.*

Hematology and Coagulation

TUESDAY, 9:00 A.M.—GOV. CLINTON, FLORENTINE ROOM

Chairman: Kenneth M. Brinkhous

1406. Comparison of bone marrow of normal and anemic mice (W-series). ELIZABETH S. RUSSELL AND CORINNE MCLAUGHLIN SNOW (introduced by JACOB FURTH). *Jackson Memorial Lab., Bar Harbor, Me.*

1407. Impairment of antimicrobial defenses following total body irradiation of mice. R. S. SPECK, E. JAWETZ AND H. S. KAPLAN (introduced by ALVIN J. COX, JR.). *Div. of Microbiology, Univ. of California School of Medicine, San Francisco, and Dept. of Pathology, Stanford Univ. School of Medicine, San Francisco.*

1408. A transmissible disease in mice characterized by anemia, leukopenia and erythropoietic splenomegaly. A. C. UPTON* AND J. FURTH. *Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

1409. Importance of disulfide (—S—S—) linkage in blood-clotting mechanism. JOHN R. CARTER AND E. D. WARNER. *Dept. of Pathology, State Univ. of Iowa, Iowa City.*

1410. Separation, concentration and transfusion of platelets from normal human blood. AL-

LEN H. MINOR AND LEE BURNETT (introduced by IRVING GRAEF). *Lenox Hill Hosp., New York City.*

1411. Platelet studies in hemorrhagic phase of acute radiation injury. E. P. CRONKITE* AND GEORGE BRECHER. *Naval Med. Research Inst. and Natl. Insts. of Health, Bethesda, Md.*

1412. Antihemophilic factor: its effect on one-stage clotting tests as the basis for a simple AHF assay procedure. ROBERT D. LANGDELL,* ROBERT H. WAGNER* AND K. M. BRINKHOUS. *Dept. of Pathology, Univ. of North Carolina, Chapel Hill.*

1413. Biological effects of beta-propiolactone. A. R. KELLY* AND F. W. HARTMAN. *Dept. of Labs., Henry Ford Hosp., Detroit, Mich.*

Tuesday Afternoon, April 15, 2:00 p.m.

Techniques

TUESDAY, 2:00 P.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: Murray D. Angevine

1414. Caffeine gastric analysis in the diagnosis of duodenal ulcer. FERRIN B. MORELAND AND DOLPH L. CURB (introduced by BELA HALPERT). *Depts. of Biochemistry and Medicine, Baylor Univ. College of Medicine, and Veterans Administration Hosp., Houston, Texas.*

1415. A portable pneumotachograph and its application to a study of human and canine respiration. PAUL E. MORROW (introduced by JAMES SCOTT). *Dept. of Radiation Biology, Div. of Pharmacology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

1416. A spectrophotometric method for studying the reactions of lymphocytes to x-rays and other reagents in vitro. ROBERT SCHREK (introduced by WILLIAM B. WARTMAN). *Tumor Research Lab., Research Service, Veterans Administration Hosp., Hines, Ill.*

1417. Continuous measurement of blood dye concentration in the intact animal. ALFRED M. SHIDELER* AND HOWARD C. HOPPS. *Dept. of Pathology, Univ. of Oklahoma School of Medicine, Oklahoma City.*

1418. Blood volume of excised organs. A. E. LEWIS,* R. D. GOODMAN* AND E. A. SHUCK* (introduced by S. C. MADDEN). *Pathology Section, Atomic Energy Project, Univ. of California School of Medicine, Los Angeles.*

1419. Fate of intravenous C^{14} labelled Dextran in dogs. ROGER TERRY AND CHARLES L. YUILE. *Dept. of Pathology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

1420. Mechanism of leukocytic responses to provocatives. BERNHARD STEINBERG AND RUTH A. MARTIN.* *Toledo Hosp. Inst. of Med. Research, Toledo, Ohio.*

1421. Enhanced Nadi reaction in lymphocytes in inflammation. JOHN W. REBUCK. *Dept. of Labs., Henry Ford Hosp., Detroit, Mich.*

Bacteriology and Immunology

TUESDAY, 2:00 P.M.—GOV. CLINTON, FLORENTINE ROOM

Chairman: Douglas H. Sprunt

1422. Resistance to grafting with lymphosarcoma cells following injection of intact, homologous lymphoid cells. H. C. STOERK, TATIANA BUDZILOVICH AND T. C. BIELINSKI. *Merck Inst. for Therapeutic Research, Rahway, N. J.*

1423. Effect of ribonucleate on globulin production in rabbits undergoing immunization. GOETZ W. RICHTER (introduced by JOHN G. KIDD). *Dept. of Pathology, New York Hosp.-Cornell Med. Center, New York City.*

1424. Mechanism of destructive action of Bunyamwera virus on Ehrlich mouse ascites tumor. ROBERT LOVE AND HILARY KOPROWSKI (introduced by G. JOHN BUDDINGH). *Lederle Labs. Div., American Cyanamid Co., Pearl River, N. Y.*

1425. Morphological and biological changes in mouse ascites tumors following induced infection with certain viruses. IRENA KOPROWSKA AND HILARY KOPROSKI (introduced by N. CHANDLER FOOT). *Dept. of Anatomy, Cornell Univ. Med. College, New York City, and Lederle Labs. Division, American Cyanamid Co., Pearl River, N. Y.*

1426. Fulminant experimental blastomycosis produced by the employment of roentgen radiation and cortisone. JACK FRIEDMAN,* FRANK J. ROTH, JR.,* ALVAR A. WERDER* AND JEROME T. SYVERTON. *Dept. of Radiology, Mt. Sinai Hosp. and the Dept. of Bacteriology and Immunology, Univ. of Minnesota, Minneapolis.*

1427. Effect of specific antibody on metabolism and growth of bacteria. RICHARD H. FOLLIS, JR., JACK M. BURNETT* AND ZELDA E. LASCHEVER.* *Dept. of Pathology, Johns Hopkins Univ. Med. School, Baltimore, Md.*

4128. Microscopic study of tissue reactions to autologous and homologous musculo-fascial transplants in rabbits. RICHARD H. ANDRESEN,* CLARENCE W. MONROE* AND GEORGE M. HASS. *Rush Lab. of Pathology and Surgery, Presbyterian Hosp., Chicago, Ill.*

1429. Opsonins for rickettsiae. JOSEPH VICTOR, RUTH RAYMOND,* JEANNE VALLIANT,* JOHN C. WAGNER* AND ABOU D. POLLACK.* *Chemical Corps Biological Labs., Camp Detrick, Frederick, Md.*

1430. Stress reactions and the tumor-breaking property of bacterial polysaccharide. BORIS SOKOLOFF, WALTER H. EDDY, GEORGE CONE AND RITA POWELLA (introduced by LEO LOEB). *Southern Bio-Research Lab., Florida Southern College, Lakeland.*

Pathology Society Business Meeting

TUESDAY, 4:00 P.M.—GOV. CLINTON, FLORENTINE ROOM

Joint Session of the Federation

TUESDAY, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Program on p. 492

Wednesday Morning, April 16, 9:00 a.m.

Arterial Lesions

WEDNESDAY, 9:00 A.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: James F. Rinehart

1431. Histochemical demonstration of 5-nucleotidase activity in cell nuclei. M. WACHSTEIN AND E. MEISEL.* *Dept. of Pathology, St. Catherine's Hosp., Brooklyn, N. Y.*

1432. Arterial atheromatous lesions in the rat. R. W. WISSLER, M. L. EILERT,* M. A. SCHROEDER* AND L. COHEN.* *Depts. of Pathology and Medicine, Univ. of Chicago, Chicago, Ill.*

1433. Atherosclerosis using histochemical and fluorescent microscopic methods. WALTER JOEL* AND HOWARD C. HOPPS. *Dept. of Pathology, Univ. of Oklahoma School of Medicine, Oklahoma City.*

1434. Production of cardiac lesions in the guinea pig by various mucopolysaccharides. RUSSELL S. JONES (introduced by GEORGE W. CHANGUS). *Inst. of Pathology, Univ. of Tennessee, Memphis.*

1435. Interrelationship of experimental coronary lesions and altered lipid metabolism. G. I. DESUTO-NAGY AND L. L. WATERS (introduced by HARRY S. N. GREENE). *Dept. of Pathology, Yale Univ. School of Medicine, New Haven, Conn.*

1436. 5-Nucleotidase, alkaline phosphatase and hexose-diphosphatase in human arterial walls. J. F. A. MCMANUS, C. H. LUPTON, JR.* AND E. M. ETHERIDGE.* *Dept. of Pathology, Univ. of Virginia School of Medicine, Charlottesville.*

1437. Correlated studies of structure and function of cardiac conduction system of dog. GORDON F. VAWTER,* C. BRUCE TAYLOR,* OGLESBY PAUL* AND GEORGE M. HASS. *Rush Lab. of Pathology, Presbyterian Hosp., and the Aero-Med. and Physical Environment Lab., Univ. of Illinois, Chicago.*

1438. Relationship of structure and oxidative phosphorylation in mitochondria of heart muscle. JOHN W. HARMAN AND MURIEL FEIGELSON.* *Dept. of Pathology, Univ. of Wisconsin Med. School, Madison.*

Tumors

WEDNESDAY, 9:00 A.M.—GOV. CLINTON, FLORENTINE ROOM

Chairman: John G. Kidd

1439. Development of Newcastle disease virus in chick embryo cells: a study with the electron microscope. FREDERIK B. BANG. *Johns Hopkins Univ. School of Medicine, Baltimore, Md.*

1440. Identification of metastatic prostatic carcinoma. GEORGE W. CHANGUS. *Inst. of Pathology, Univ. of Tennessee, Memphis.*

1441. Influence of cortisone and of newborn state on most resistance to transplanted heterologous tumors. E. J. EICHWALD, N. Y. CHANGE AND M. LETTIERI (introduced by F. D. GUNN. *Dept. of Pathology, Univ. of Utah College of Medicine, Salt Lake City.*

1442. Distribution of thromboplastic qualities in cell components or normal and neoplastic tissues. LISELOTTE GRAF, MAURICE M. RAPPORT AND FRANK MALTANER (introduced by GILBERT DALLDORF). *Div. of Labs. and Research, New York State Dept. of Health, and Sloan-Kettering Inst. for Cancer Research, New York City.*

1443. Significance of heterologous transplantability of human cancer. HARRY S. N. GREENE, *Yale Univ. School of Medicine, New Haven, Conn.*

1444. Experimental testicular tumors in rats. WILLIAM H. STERNBERG,* RICHARD COPPEDGE* AND ALBERT SEGALOFF. *Depts. of Pathology and Medicine, Tulane Univ. and Ochsner Fndn., New Orleans, La.*

1445. Effect of absorption upon carcinogenicity of hydrocarbons. E. VON HAAM, H. L. TITUS,* GEORGE Y. SHINOWARA* AND I. T. CAPLAN.* *Dept. of Pathology, Ohio State Univ., Columbus.*

1446. Pathological changes in vagina and cervix of mice with advancing age and under influence of injections of alpha estradiol-sensitized collodion particles. CYRUS C. ERICKSON, WILLIAM L. WILLIAMS, JR.* AND KATHERYN PAULLUS.* *Inst. of Pathology, Univ. of Tennessee, Memphis.*

1447. Desoxyribonucleic acid (DNA) content of tumor cells determined microphotometrically. WILLIAM H. CARNES, NORMAN WEISSMAN AND BENJAMIN GOLDBERG.* *Depts. of Pathology, Physiological Chemistry and Preventive Medicine, Johns Hopkins Med. School, Baltimore, Md.*

Wednesday Afternoon, April 16, 2:00 p.m.

Inflammation and Wound Healing

WEDNESDAY, 2:00 P.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: Russell L. Holman

1448. Factors which influence phagocytosis by reticulo-endothelial cells in early hours of inflammation in subcutaneous areas. EDNA H. TOMPKINS. *Cancer Research Inst., New England Deaconness Hosp., Boston, Mass.*

1449. Mechanism of localization of vital dyes in inflamed tissues. HOWARD C. HOPPS AND E. PHILIP KLEIN.* *Dept. of Pathology, Univ. of Oklahoma School of Medicine, Oklahoma City.*

1450. Chemical studies of ATP-induced contraction of isolated skeletal myofibrils. CHARLES A. ASHLEY,* ALBERTAS ARASIMAVICIUS* AND GEORGE M. HASS. *Rush Lab. of Pathology, Presbyterian Hosp., Chicago, Ill.*

1451. Differential dimensional effect of heat and formic acid upon elastic and collagenous connective tissues. J. P. AYER,* SHIELDS WARREN AND GEORGE M. HASS. *Cancer Research Inst., New England Deaconess Hosp., Boston, Mass., and Rush Lab. of Pathology, Presbyterian Hosp., Chicago, Ill.*

1452. Effects of cortisone on healing of non-perforating wounds of cornea in normal and scorbutic guinea pigs. AELETA BARBER AND W. G. NOTHACKER (introduced by RUSSELL L. HOLMAN). *Dept. of Pathology, Louisiana State Univ. School of Medicine, New Orleans.*

1453. Effects of ACTH on wound healing at various levels of ascorbic acid intake. CONRAD L. PIRANI, ROBERT C. STEPTO* AND C. FRANK CONSOLAZIO.* *U. S. Army Med. Nutrition Lab. and Dept. of Pathology, Univ. of Illinois College of Medicine, Chicago.*

1454. ACTH content of pituitary at different levels of ascorbic acid intake. ROBERT C. STEPTO,* CONRAD L. PIRANI, JOSEPH D. FISHER* AND KENNETH SUTHERLAND.* *U. S. Army Med. Nutrition Lab., and Armour Labs., Chicago, Ill.*

1455. Protein intake and pulmonary tuberculosis in hamsters and guinea pigs. H. L. RATCLIFFE. *Penrose Research Lab., Zoological Society, and Dept. of Pathology, Univ. of Pennsylvania School of Medicine, Philadelphia.*

1456. Bowel lesions following single deuteron irradiation. V. P. BOND,* M. N. SWIFT,* C. A. TOBIAS* AND G. BRECHER. *Naval Radiological Defense Lab., San Francisco, Calif., and Natl. Insts. of Health, Bethesda, Md.*

Vitamins and Minerals

WEDNESDAY, 2:00 P.M.—GOV. CLINTON FLORENTINE ROOM

Chairman: Jesse L. Bollman

1457. Siderosis and mast cell vacuolation in albino rat after toluidine blue administration. PERIHAN CAMBEL (introduced by JACOB FURTH). *Cancer Research Lab., Univ. of Florida, Gainesville.*

1458. Effect of sodium monofluoroacetate on bacterial metabolism of citrate in human blood. ABRAHAM BRAUDE, JAY SANFORD AND JANE BARTLETT (introduced by C. C. STURGIS). *Dept. of Internal Medicine, Univ. of Michigan Med. School, Ann Arbor.*

1459. Radioactive zinc metabolism in patients with neoplastic diseases. FRANK G. EBAUGH, JR.* AND JOSEPH F. ROSS. *Evans Memorial and Massachusetts Memorial Hosps., and Dept. of Medicine, Boston Univ. School of Medicine, Boston.*

1460. Iron absorption in normal, anemic and hemochromatotic subjects. R. B. CHODOS,* J. F. ROSS, M. A. ADAMS* AND M. C. O'BRIEN.* *Radioisotope Unit and Med. Service of Cushing Veterans Administration Hosp., Framingham, Mass.*

1461. Significance of plasma iron turnover rate. STUART C. FINCH* AND JOSEPH F. ROSS. *Evans Memorial and Massachusetts Memorial Hosps., and Dept. of Medicine, Boston Univ., Boston.*

1462. Hypervitaminosis D in frog, with special reference to changes in paravertebral lime sacs. HANS G. SCHLUMBERGER AND DONALD H. BURK.* *Dept. of Pathology, Ohio State Univ. College of Medicine, Columbus.*

1463. Identification of elements of bone in pathological calcification. NORMAN S. MACDONALD AND M. M. ZACK (introduced by THOMAS J. HALEY). *Univ. of California School of Medicine, Los Angeles.* (Pharmacol.)

1464. Chemical and immunological studies on a soluble protein fraction from liver mitochondria. LEO R. MELCHER AND JOSEPH SHACK (introduced by MICHAEL B. SHIMKIN). *Natl. Cancer Inst., Natl. Insts. of Health, Bethesda, Md., and Div. of Medicine, Univ. of California School of Medicine, San Francisco.*

Pathology Society Dinner

WEDNESDAY, 7:00 P.M.—HOTEL STATLER

Thursday Morning, April 17, 9:00 a.m.

Liver and Protein Metabolism

THURSDAY, 9:00 A.M.—GOV. CLINTON, GOVERNOR'S ROOM

Chairman: F. S. Robschiet-Robbins

1465. Non-enzymatic reduction of basophilia and metachromasia in tissue sections by proteins. JOHN E. FRENCH* AND EARL P. BENDITT. *Dept. of Pathology, Univ. of Chicago, and La Rabida Jackson Park Sanitarium, Chicago, Ill.*

1466. Azorubin-binding capacity of serum albumin of rats subjected to tourniquet shock and CCl_4 poisoning. ULRICH WESTPHAL, ROBERT DEARMOND, STANLEY G. PRIEST AND JOHN F. STETS (introduced by H. JENSEN). *Army Med. Research Lab., Fort Knox, Ky.* (Biochem.)

1467. Effect of aureomycin and whole blood, separately and in combination on x-irradiated dog. F. W. FURTH,* M. P. COULTER,* R. W. MILLER,* J. W. HOWLAND AND S. N. SWISHER.* *Univ. of Rochester Atomic Energy Project, Rochester, N. Y.*

1468. Relation between protein depletion and protein synthesis in albino rat. NORMAN D. LEE* AND ROBERT H. WILLIAMS. *Dept. of Medicine, Univ. of Washington Med. School, Seattle.*

1469. Influence of hepatic injury upon choline utilization. J. DE LA HUERGA,* H. POPPER AND D. KOCH-WESER. *Hektoen Inst. for Med. Research and Dept. of Pathology, Cook County Hosp., and Northwestern Univ., Chicago, Ill.*

1470. Hepatic injury due to lack of available amino acids. D. KOCH-WESER,* H. POPPER AND J. DE LA HUERGA.* *Hektoen Inst. for Med. Research and Dept. of Pathology, Cook County Hosp., and Northwestern Univ., Chicago, Ill.*

1471. Diagnostic significance of fatty cysts in livers of human autopsy material. W. STANLEY HARTROFT. *Dept. of Pathology and Banting and Best Dept. of Med. Research, Univ. of Toronto, Canada.*

1472. Dietary glycine nitrogen metabolism as influenced by protein feeding and prior protein fasting, studied with N^{15}. S. C. MADDEN, L. I. GIDEZ* AND J. A. FANCHER, JR.* *Div. of Pathology, Brookhaven Natl. Lab., Upton, L. I., N. Y., and Dept. of Pathology, Univ. of California School of Medicine, Los Angeles.*

1473. Protective action of sulfa drugs against injury to liver of mouse by CCl_4. J. WALTER WILSON. *Dept. of Biology, Brown Univ., Providence, R. I.*

Enzymes and Hormones

THURSDAY, 9,00 A.M.— GOV. CLINTON, FLORENTINE ROOM

Chairman: Cyrus C. Erickson

1474. Effect of ascorbic acid, folic acid and vitamin B_{12} upon tyrosine oxidation in acetone powder preparations of guinea pig liver. BERNARD SCHEPARTZ AND ELI M. NADEL (introduced by HAROLD L. STEWART). *Dept. of Biochemistry, Jefferson Med. College, Philadelphia, Pa., and Pathology Section, Natl. Cancer Inst., Bethesda, Md.*

1475. Effects of steroids on thymus. N. B. FRIEDMAN, E. J. BOMZE* AND S. ROTHMAN.* *Div. of Labs., Cedars of Lebanon Hosp., and Dept. of Pathology, Univ. of Southern California School of Medicine, Los Angeles.*

1476. Direct local action of thyroxin and thyroxin analogues in anuran tail fin. JANE COUFFER KALTENBACH (introduced by D. MURRAY ANGEVINE). *Dept. of Pathology, Univ. of Wisconsin, Madison.*

1477. Choline absorption from small intestine of rat. JOHN W. VETPER,* JESUS DE LA HUERGA,* MORTON I. GROSSMAN* AND HANS POPPER. *U. S. Army Med. Nutrition Lab. and Hektoen Inst. for Med. Research, Chicago, Ill.*

1478. Experimental determination of rate of longitudinal bone growth. H. A. SISSONS (introduced by WILLIAM B. WARTMAN). *Dept. of Pathology, Northwestern Univ. Med. School, Chicago, Ill., and Inst. of Orthopaedics, London, England.*

1479. Effect of growth hormone on development of chick embryo. T. Y. WANG,* K. M. WANG* AND H. T. BLUMENTHAL. *Div. of Hormone Research, Labs. of the Jewish Hosp. of St. Louis, and Dept. of Pathology, St. Louis Univ. School of Medicine, St. Louis, Mo.*

1480. Pancreatic fibrosis in ducklings as result of nutritional deficiency. O. NEAL MILLER AND R. H. RIGDON. *Dept. of Biochemistry and Nutrition and Lab. of Exptl. Pathology, Univ. of Texas Med. Branch, Galveston.*

1481. In vivo effects of thiaminase. L. B. WALSH,* D. GREIFF* AND H. PINKERTON. *Dept. of Biology and Pathology, St. Louis Univ., St. Louis, Mo.*

Pathology Society Business Meeting

THURSDAY, 4:00 P.M.—GOV. CLINTON, FLORENTINE ROOM

PAPERS READ BY TITLE

1482. Homotransplantation of the lung. H. A. Davis, J. P. O'Connor,* G. J. Coloviras, Jr.* and D. A. Strawn.* *Dept. of Surgery, College of Med. Evangelists, Los Angeles Div., Los Angeles, Calif.*

1483. Histochemical reactions demonstrating protein in Charcot-Leyden crystals. Clyde J. Dawe* and W. Lane Williams. *Sec. on Surgical Pathology, Mayo Clinic, Rochester, and Dept. of Anatomy, Univ. of Minnesota, Minneapolis.*

1484. Effects of virucide beta-propiolactone and its degradation products on blood platelets. A. R. Kelly (introduced by F. W. Hartman). *Dept. of Labs., Henry Ford Hosp., Detroit, Mich.*

1485. Comparative study of clotting defects in human, canine and porcine hemophilia. K. M. Brinkhous, F. C. Morrison, Jr.* M. E. Murrer.* *Dept. of Pathology, Univ. of North Carolina, Chapel Hill, and Dept. of Agricultural Chemistry, Univ. of Missouri, Columbia.*

1486. Quantitative studies into skeletal effects of high-fat diest. Martin Silberberg, Ruth Silberberg and Marion Opdyke.* *Snodgras Lab., City Hosp., and Dept. of Pathology, Washington Univ., St. Louis, Mo.*

1487. Degenerative joint disease in Syrian hamsters. R. Silberberg, J. Saxton, G. Sperling* and C. McCay. *Snodgras Lab., City Hosp., and Dept. of Pathology, Washington Univ., St. Louis, Mo., and Dept. of Animal Husbandry, Cornell Univ., Ithaca, N. Y.*

1488. Effect of ascorbic acid analogue on radiosensitivity of transplanted tumors. B. Sokoloff, W. H. Eddy, L. Streltzov and G. Cone (introduced by Leo Loeb). *Southern Bio-Research Lab., Florida Southern College, Lakeland.*

1489. Effect of vitamin C-free diet on ascorbic acid content and white blood cells of Ak leukemic mice. B. Sokoloff, W. H. Eddy, J. Beaumont, R. Powella and G. Cone (introduced by Leo Loeb). *Southern Bio-Research Lab., Florida Southern College, Lakeland.*

1490. Hepatic injury in mice fed a yeast-protein diet. W. Lane Williams and R. B. Aronsohn.* *Dept. of Anatomy, Univ. of Minnesota, Minneapolis.*

AMERICAN INSTITUTE OF NUTRITION

Sixteenth Annual Meeting

New York City, April 14–18, 1952

(An asterisk following an author's name indicates "by invitation")*

Tuesday Morning, April 15, 9:00 a.m.

Amino Acids

TUESDAY, 9:00 A.M.—NEW YORKER, NORTH BALLROOM

Chairman: William C. Rose

1491. Estimation of amino acid requirements of swine from tissue analyses. L. V. CURTIN,* JEAN ABRAHAM,* HAROLD H. WILLIAMS, J. K. LOOSLI AND L. A. MAYNARD. *Depts. of Biochemistry and Nutrition and Animal Husbandry, Cornell Univ., Ithaca, N. Y.*

1492. The amino acid requirement of young women. I. Threonine. R. M. LEVERTON, M. R. GRAM,* E. BRODOVSKY,* A. MITCHELL* AND M. CHALOUPKA.* *Human Nutrition Lab., Nebraska Agricultural Experiment Station, Lincoln.*

1493. Methionine in maintenance of structure of hepatic tissue. CECILE HOOVER EDWARDS* AND PEARL SWANSON. *Nutrition Lab., Iowa Agricultural Experiment Station, Ames.*

1494. Sulfur-containing amino acids and vitamin E in dietary necrotic liver degeneration. KLAUS SCHWARZ (introduced by FLOYD S. DAFT). *Natl. Inst. of Arthritis and Metabolic Diseases, Natl. Insts. of Health, Bethesda, Md.*

1495. Biosynthesis of amino acids in lactating dairy cows from $C^{14}O_2$. A. L. BLACK (introduced by MAX KLEIBER). *School of Veterinary Medicine, Univ. of California, Davis.*

1496. Synthesis of cystine from inorganic sulfate by the hen. L. J. MACHLIN,* C. A. DENTON,* P. B. PEARSON AND H. R. BIRD. *Bureau of Animal Industry, U. S. Dept. of Agriculture, Beltsville, Md.*

1497. Further studies on the comparative absorption of amino acids from the intestine. ALINE UNDERHILL ORTEN, MARCEIL D. VANBUREN* AND CHARLES G. JOHNSTON.* *Dept. of Surgery, Wayne Univ. College of Medicine, Detroit, Mich.*

1498. Retention of essential amino acids when inadequate quantities are fed to the growing chick. WALTER C. RUSSELL, M. WIGHT TAYLOR AND WILLIAM A. PRICE, JR.* *Dept. of Agricultural Biochemistry, New Jersey Agricultural Experiment Station, Rutgers Univ., New Brunswick, N. J.*

1499. Utilization of lysine from foods by the protein-depleted rat. B. S. SCHWEIGERT, BARBARA T. GUTHNECK* AND BARBARA A. BENNETT.* *Div. of Biochemistry and Nutrition, American Meat Inst. Fndn. and Dept. of Biochemistry, Univ. of Chicago, Chicago, Ill.*

1500. Nitrogen balance in the adult rat as affected by diets low in L-, DL- and D-phenylalanine. E. S. NASSET AND ANN M. SILICIANO.* *Dept. of Physiology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

1501. Utilization of D-valine for growth by the rat. JULIUS WHITE, WILLIAM S. FONES* AND HERBERT A. SOBER.* *Natl. Cancer Inst., Natl. Insts. of Health, Bethesda, Md.* (Biochem.)

1502. Time factor in utilization of dietary amino acids. E. GEIGER, I. EL RAWI* AND LESLIE E. GEIGER.* *Univ. of Southern California Med. School and Van Camp Lab., Terminal Island, Calif.*

Tuesday Afternoon, April 15, 1:15 p.m.

Vitamin B_{12}; Folic Acid

TUESDAY, 1:15 P.M.—NEW YORKER, NORTH BALLROOM

Chairman: Thomas H. Jukes

1503. Effect of large amounts of ascorbic acid on iron salt-induced folic acid deficiency. ERNEST G. MCDANIEL* AND FLOYD S. DAFT. *Natl. Inst. of Arthritis and Metabolic Diseases, Natl. Insts. of Health, Bethesda, Md.*

1504. Occurrence of a conjugated form of leuconostoc citrovorum factor (CF). V. M. DOCTOR* AND J. R. COUCH. *Texas A and M College System, College Station.*

1505. A rapid simplified microbiological assay method for vitamin B_{12} and other vitamins. WILLIAM L. WILLIAMS, RAYMOND G. ESPOSITO AND JACK V. PIERCE (introduced by T. H. JUKES). *Lederle Labs., American Cyanamid Co., Pearl River, N. Y.*

1506. Rat growth assay for vitamin B_{12}. Correspondence with collaborative microbiological assay results on USP liver extracts. DOUGLAS V. FROST, HOWARD H. FRICKE* AND HENRY C. SPRUTH.* *Abbott Labs., North Chicago, Ill.*

1507. Apparent vitamin B_{12} content of eggs as affected by extraction in the presence of cyanide. C. A. DENTON,* W. L. KELLOGG* AND H. R. BIRD. *Bureau of Animal Industry, U. S. Dept. of Agriculture, Beltsville, Md.*

1508. Bioautographic analysis of extracts of blood from various species. J. R. COUCH AND V. M. DOCTOR.* *Texas A and M College System, College Station.*

1509. Appearance of radioactivity in milk of rats after oral and parenteral administration of vitamin B_{12} containing cobalt^{60}. R. C. ELLINGSON,* A. J. MUELLER,* WARREN M. COX, JR. AND B. F. CHOW. *Mead Johnson Research Labs., Evansville, and Dept. of Biochemistry, Johns Hopkins Univ., Baltimore, Md.*

1510. Disappearance of radioactivity from various organs or normal adult rats following subcutaneous injection of tagged vitamin B_{12}. ROBERT A. HARTE,* BACON F. CHOW AND LOIS BARROWS.* *Research Div., Sharp and Dohme, Inc., West Point, Pa., and Dept. of Biochemistry, Johns Hopkins Univ., Baltimore, Md.*

1511. Prevention of nutritional edema with vitamin B_{12} and folic acid. R. W. ENGEL AND H. D. ALEXANDER.* *Dept. of Animal Husbandry and Nutrition, Alabama Polytechnic Inst., Auburn.*

1512. Factors involved in the utilization of homocystine by chicks. THOMAS H. JUKES. *Lederle Labs., American Cyanamid Co., Pearl River, N. Y.*

1513. Interrelationships between choline and vitamin B_{12} in the rat and in the mouse. JOHN J. TRAVERS* AND LEOPOLD R. CERECEDO. *Dept. of Biochemistry, Fordham Univ., New York City.*

1514. Effects of diet, partial hepatectomy and growth promoting factors on the composition of the rat liver. MARY E. DUMM* AND ELAINE P. RALLI. *Dept. of Medicine, New York Univ., Bellevue Med. Center, New York City.*

Nutrition Society Business Meeting

TUESDAY, 4:00 P.M.—NEW YORKER, PARLOR F-G

Joint Session of the Federation

TUESDAY, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Program on page 492

Wednesday Morning, April 16, 9:00 a.m.

Amino Acids and Proteins

WEDNESDAY, 9:00 A.M.—NEW YORKER, NORTH BALLROOM

Chairman: C. A. Elvehjem

1515. Protein nutrition in highly inbred strains of mice. PAUL F. FENTON, MARIAN T. DOWLING* AND JOHN B. LYON, JR.* *Brown Univ., Providence, R. I.*

1516. Effect of amino acid imbalance on the course of Lansing poliomyelitis in mice. S. N. GERSHOFF, A. F. RASMUSSEN, JR. AND P. F. CLARK (introduced by C. A. ELVEHJEM). *Depts. of Biochemistry and Med. Microbiology, Univ. of Wisconsin, Madison.*

1517. Growth retarding effect of unheated soybeans. C. H. HILL* AND R. BORCHERS. *Dept. of Agricultural Chemistry, Univ. of Nebraska, Lincoln.*

1518. Influence of processing on the efficiency of the proteins in cottonseed and soybean meals. BARNETT SURE. *Dept. of Agricultural Chemistry, Univ. of Arkansas, Fayetteville.*

1519. Further *in vivo* and *in vitro* studies on the Maillard reaction. M. IACOBELLIS, H. LEES AND L. J. SCHROEDER (introduced by ARTHUR H. SMITH). *Dept. of Physiological Chemistry, Wayne Univ. College of Medicine, Detroit, Mich.*

1520. Influence of dietary fat on nitrogen metabolism in the protein-depleted rat. HAZEL METZ FOX,* S. P. YANG* AND PEARL SWANSON. *Nutrition Lab., Iowa Agricultural Experiment Station, Ames.*

1521. Utilization of nitrogen in the absence of adequate calories. WARREN M. COX, JR., RUDOLPH C. ELLINGSON* AND ARTHUR J. MUELLER.* *Mead Johnson Research Labs., Evansville, Ind.*

1522. Serum alkaline phosphatase of male rats during food restriction and subsequent protein rehabilitation. ESTHER DACOSTA AND RUTH CLAYTON.* *U. S. Army Med. Nutrition Lab., Chicago, Ill.*

1523. Influence of the protein level and of manganese on bone weight, total calcium content and percentage calcium. RAYMON M. GREENBERG,* MARIE GREENE BARRY* AND JEAN MAYER. *Dept. of Nutrition, Harvard School of Public Health, Boston, Mass.*

1524. Effect of various dietary proteins on the cholinesterase activity of plasma and brain tissue of rats. CHARLES H. BARROWS* AND BACON F. CHOW. *Dept. of Biochemistry, School of Hygiene and Public Health, Johns Hopkins Univ., Baltimore, Md.*

1525. Liver glycogen of the rat after food restriction and rehabilitation on a high protein diet unsupplemented or supplemented by vitamin B_{12}. RUTH CLAYTON* AND ESTHER DACOSTA. *U. S. Army Med. Nutrition Lab., Chicago, Ill.*

Wednesday Afternoon, April 16, 1:15 p.m.

Symposium: Geriatric Nutrition

WEDNESDAY, 1:15 P.M.—NEW YORKER, NORTH BALLROOM

Chairman: Clive M. McCay

1526. Problems of experimental design in studies of aging and a preliminary report of experimental data. MAURICE B. VISSCHER. *Univ. of Minnesota, Minneapolis.*

1527. Intakes and retentions of nitrogen, calcium and phosphorus by 136 women between 30 and 85 years of age. MARGARET A. OHLSON. *Michigan State College, East Lansing.*

1528. Changes of body composition in man during maturity and their nutritional implications. JOSEF BROZEK. *Univ. of Minnesota, Minneapolis.*

1529. Fundamental considerations—old and new—in geriatric nutrition. FREDERIC D. ZEMAN. *Home for Aged Hebrews, New York City.*

American Institute of Nutrition Dinner

Presentation of Awards

WEDNESDAY, 6:00 P.M.—HOTEL NEW YORKER

Thursday Morning, April 17, 9:00 a.m.

B-Vitamins, Antibiotics

THURSDAY, 9:00 A.M.—NEW YORKER, PARLOR F-G

Chairman: W. H. Sebrell, Jr.

1530. A simple microbiological nutritional assay procedure employing seeded agar tubes. MAURICE E. SHILS, ANNA C. GELMAN* AND MARTIN HOROWITZ.* *School of Public Health, Columbia Univ., New York City.*

1531. Importance of relative humidity in vitamin deficiencies. R. A. COLLINS,* M. SCHREIBER,* H. NINO* AND C. A. ELVEHJEM. *Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

1532. Effect of whole body x-irradiation on urinary B-vitamin excretion of rats. WILLIAM N. PEARSON,* JANET P. OWENS,* WILLIAM J. DARBY AND GRANVILLE W. HUDSON.* *Depts. of Biochemistry and Radiology, Vanderbilt Univ. School of Medicine, Nashville, Tenn.*

1533. Pantothenic acid deficiency in the guinea pig. MARY ELIZABETH REID. *Natl. Inst. of Arthritis and Metabolic Diseases, Natl. Insts. of Health, Bethesda, Md.*

1534. Effect of pantothenic acid deficiency and food intake on the respiration of duodenal mucosa. JOSEPH J. VITALE* AND D. M. HEGSTED. *Dept. of Nutrition, Harvard School of Public Health, Boston, Mass.*

1535. Modification of choline deficiency by simultaneous pantothenic acid deficiency. AGNES FAY MORGAN AND EUNICE M. LEWIS.* *Dept. of Home Economics, Univ. of California, Berkeley.*

1536. Relation of anterior pituitary gonadotrophins to pyridoxine deficiency in the rat. MARJORIE M. NELSON, WILLIAM R. LYONS* AND HERBERT M. EVANS.* *Inst. of Exptl. Biology and Div. of Anatomy, Univ. of California, Berkeley.*

1537. Evidence for a metabolic function of thiamine not mediated through cocarboxylase. D. W. WOOLLEY AND R. B. MERRIFIELD.* *Rockefeller Inst. for Med. Research, New York City.*

1538. Studies with chicks receiving suboptimum amounts of vitamins with and without antibiotics. L. G. BLAYLOCK,* L. R. RICHARDSON AND C. M. LYMAN.* *Texas Agricultural Experiment Station, College Station.*

1539. Effect of antibiotics on amino acid-supplemented rice diets. LOUIS J. PECORA (introduced by JAMES M. HUNDLEY). *Natl. Inst. of Arthritis and Metabolic Diseases, Natl. Insts. of Health, Bethesda, Md.*

1540. Effect of large oral dosages of aureomycin on the splenic lesions developed by rats depleted of folacin. CONRADO F. ASENJO AND A. POMALES-LEBRON.* *Depts. of Biochemistry and Nutrition and Microbiology, Univ. of Puerto Rico School of Medicine, San Juan.*

Thursday Afternoon, April 17, 1:15 p.m.

Unidentified Factors; Human Nutrition

THURSDAY, 1:15 P.M.—NEW YORKER, PARLOR F-G

Chairman: Charles G. King

1541. Glutamine, a growth stimulating factor for *Lactobacillus Gayoni* 8289. DEXTER ROGERS,* AGNAR P. NYGAARD,* TSOO E. KING* AND VERNON H. CHELDELIN. *Dept. of Chemistry, Oregon State College, Corvallis.*

1542. Function of vitamin B_T (carnitine). G. FRAENKEL. *Dept. of Entomology, Univ. of Illinois, Urbana.*

1543. Unidentified growth factors for chicks. J. MCGINNIS, L. R. BERG AND H. SAXENA (introduced by A. C. WIESE). *Dept. of Poultry Science, State College of Washington, Pullman.*

1544. Food habits of women 30–90 years old: North Central cooperative study (NC-5) on nutritional status and dietary needs of population groups. PEARL SWANSON, MARGARET OHLSON, LIDA BURRILL,* ALICE BIESTER,* JANICE SMITH AND ESTHER BATCHELDER. *State College of Iowa, Ames; State College of Michigan, East Lansing; State College of North Dakota, Fargo; Univ. of Minnesota, Minneapolis; Univ. of Illinois, Urbana; and Bureau of Human Nutrition and Home Economics, Washington, D. C.*

1545. Nutritional status of 60 women with respect to vitamin C. CHARLOTTE RODERUCK, HARRIETT ROBERTS,* MAXINE BRITTON* AND PEARL SWANSON. *Iowa State College, Ames, and Bureau of Human Nutrition and Home Economics, Washington, D. C.*

1546. Contribution of protein, fat and carbohydrates to the caloric intake of obese individuals. RACHEL BEAUDOIN* AND JEAN

MAYER. *Dept. of Nutrition, Harvard School of Public Health, Boston, Mass.*

1547. Development of anemia on Newfoundland enriched flour. L. BRADLEY PETT. *Dept. Natl. Health and Welfare, Ottawa, Canada.*

1548. Nutritional status of Iowa school children. ERCEL EPPRIGHT,* CHARLOTTE RODERUCK AND MILICENT HATHAWAY. *Iowa State College, Ames, and Bureau of Human Nutrition and Home Economics, Washington, D. C.*

1549. Serum ascorbic acid, vitamin A, carotene, vitamin E, riboflavin and alkaline phosphatase values in Central American school children. MIGUEL GUZMAN* AND NEVIN S. SCRIMSHAW. *Inst. of Nutrition of Central America and Panama, Guatemala.*

1550. Physical measurements of school children. ABBY MARLATT,* MARY BROWN PATTON,* ERCEL EPPRIGHT* AND MILICENT HATHAWAY. *Kansas State College, Manhattan, Ohio State Univ., Columbus, Iowa State College, Ames, and Bureau of Human Nutrition and Home Economics, Washington, D. C.*

Nutrition Society Business Meeting

THURSDAY, 4:00 P.M.—NEW YORKER, PARLOR F-G

Friday Morning, April 18, 9:00 a.m.

Vitamins A, C, and E; Minerals

FRIDAY, 9:00 A.M.—NEW YORKER, PARLOR F-G

Chairman: H. J. Deuel, Jr.

1551. A comparison of physical-chemical methods with the biological assay of vitamin A. T. K. MURRAY* AND J. A. CAMPBELL. *Food and Drug Div., Dept. of Natl. Health and Welfare, Ottawa, Canada.*

1552. Effect of yeast on the biological activity of vitamin A and β-carotene. E. L. HOVE. *Dept. of Animal Husbandry and Nutrition, Alabama Polytechnic Inst., Auburn.*

1553. Collagen formation in vitamin A deficient rats. W. VAN B. ROBERTSON AND VALMORE CROSS (introduced by H. B. PIERCE). *Univ. of Vermont College of Medicine, Burlington.*

1554. Liver Storage of vitamin A in tumor-bearing mice. PATRICIA T. MCCARTHY* AND LEOPOLD R. CERECEDO. *Dept. of Biochemistry, Fordham Univ., Bronx, N. Y.*

1555. Elimination of interference in the determination of ascorbic acid by the 2,4-dinitrophenylhydrazine methods. VICTOR SCHOCKEN* AND JOSEPH H. ROE. *Dept. of Biochemistry, George Washington Univ. School of Medicine, Washington, D. C.*

1556. Comparative urinary excretion of ascorbic, dehydroascorbic and diketogulonic acids in the rat under normal and low temperature conditions. MARY MILLS MONIER AND ROSLYN J. WEISS (introduced by JOSEPH H. ROE). *Dept. of Biochemistry, George Washington Univ. School of Medicine, Washington, D. C.*

1557. Pharmacological value of flavonoids in capillary fragility. WALTER H. EDDY AND BORIS SOKOLOFF.* *Southern Bio-Research Lab. Florida Southern College, Lakeland*

1558. Distribution of tocopherols in human tissues. KARL E. MASON, MEI YU DJU* AND LLOYD J. FILER, JR.* *Dept. of Anatomy, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.*

1559. Tri-o-cresyl phosphate as a vitamin E antagonist in the lamb and rat. HAROLD H. DRAPER,* M. F. JAMES* AND B. CONNOR JOHNSON. *Div. of Animal Nutrition, Univ. of Illinois, Urbana.* (Biochem.)

1560. An elevated xanthine oxidase in vitamin E deficient rabbits. JAMES S. DINNING (introduced by PAUL L. DAY). *Dept. of Biochemistry, Univ. of Arkansas School of Medicine, Little Rock.*

1561. Influence of copper on iron absorption. M. S. CHASE,* C. J. GUBLER, G. E. CARTWRIGHT AND M. M. WINTROBE.* *Dept. of Medicine, Univ. of Utah College of Medicine, Salt Lake City.*

1562. Role of copper in erythropoiesis. C. J. GUBLER, M. E. LAHEY,* M. S. CHASE,* G. E. CARTWRIGHT AND M. M. WINTROBE. *Depts. of Medicine and Pediatrics, Univ. of Utah College of Medicine, Salt Lake City.*

Friday Afternoon, April 18, 1:15 p.m.

Lipids; Carbohydrates; General

FRIDAY, 1:15 P.M.—NEW YORKER, PARLOR F-G

Chairman: Joseph H. Roe

1563. Determination of unsaturated fatty acids in blood serum. HILDA F. WIESE* AND ARILD E. HANSEN. *Dept. of Pediatrics, Univ. of Texas Med. Branch, Galveston.*

1564. Unsaturated fatty acid levels in human serum. ARILD E. HANSEN AND HILDA F. WIESE.* *Dept. of Pediatrics, Univ. of Texas Med. Branch, Galveston.*

1565. Control of cholesterol metabolism in rabbits. GEORGE V. MANN, HILDA WHITE* AND F. J. STARE. *Dept. of Nutrition, Harvard School of Public Health, Boston, Mass.*

1566. Dietary fat and carbohydrate in reproduction and lactation. C. E. FRE[illegible], R. H. INGRAM,* L. K. KNOEBEL* AND R. W. SWIFT *Dept. of Animal Nutrition, Pennsylvania State College, State College.*

1567. Primary hereditary lesion in obese-diabetic mice. JEAN MAYER, MARGARET W. BATES,* RUTH RUSSELL* AND MARGARET M. DICKIE.* *Dept. of Nutrition, Harvard School of Public Health, Boston, Mass., and Jackson Memorial Lab., Bar Harbor, Maine.*

1568. Extension of the glucostatic scheme of regulation of food intake to 'Houssay' animals, diabetes and other special cases. MARGARET W. BATES* AND JEAN MAYER. *Dept. of Nutrition. Harvard School of Public Health, Boston, Mass.*

1569. Carbohydrate tolerance in obese and non-obese subjects. THEODORE B. VAN ITALLIE,* RACHEL BEAUDOIN* AND JEAN MAYER.

Dept. of Nutrition, Harvard School of Public Health, Boston, Mass.

1570. Apparent phosphate requirement for choline oxidase activity. CHARLES ANGEL AND O. NEAL MILLER (introduced by WENDELL H. GRIFFITH.) *Dept. of Biochemistry and Nutrition, Univ. of Texas Med. Branch, Galveston.*

1571. Effects of nonionic surface active agents on the growth of animals. J. B. ALLISON, H. L. ROSENTHAL* AND A. H. MILLS.* *Bureau of Biological Research, Rutgers Univ., New Brunswick, N. J.*

1572. Incomplete recovery of the rat after early retardation in growth. MARIANNE GOETTSCH. *Dept. of Biochemistry and Nutrition, Univ. of Puerto Rico School of Medicine, San Juan.*

1573. Diet as a factor in the production of degenerative changes in tissues of rat. ELIZABETH C. CALLISON, MURRAY FISHER* AND ELSA ORENT-KEILES. *Bureau of Human Nutrition and Home Economics, U. S. Dept. of Agriculture, Beltsville, Md.*

1574. Prolonged percutaneous administration of sex hormones on growing male rats. A. E. LIGHT AND J. A. TORNABEN (introduced by G. R. COWGILL). *Wellcome Research Labs., Tuckahoe, N. Y.*

PAPERS READ BY TITLE

1575. Tracer studies of the biological precursors of glycine. P. C. CHAO,* C. C. DELWICHE* AND DAVID M. GREENBERG. *Div. of Biochemistry, Univ. of California School of Medicine and Div. of Plant Biochemistry, Univ. of California, Berkeley.*

1576. Iodine in nutrition. ISIDOR GREENWALD. *Dept. of Chemistry, New York Univ. College of Medicine, New York City.*

1577. Improvement of milled rice proteins by buttermilk and whey proteins. MARINUS C. KIK. *Univ. of Arkansas, Fayetteville.*

1578. Goitrogenic action of excess calcium and of propylthiouracil alone and in combination in adequate synthetic diets. MYRA M. SAMPSON AND ANN PUTZKI.* *Dept. of Zoology, Smith College, Northampton, Mass.*

THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Thirty-sixth Annual Meeting

New York City, April 14–18, 1952

(An asterisk following an author's name indicates "by invitation")*

Tuesday Morning, April 15, 9:00 a.m.

Viruses

TUESDAY, 9:00 A.M.—STATLER, KEYSTONE ROOM

1579. Neutralizing antibodies against recently isolated viruses in the sera of human beings. K. C. SMITHBURN. *Labs. of Div. of Med. and Public Health, Rockefeller Fndn., New York City.*

1580. Possible relationships of epidemic keratoconjunctivitis virus to other viruses. ISAAC RUCHMAN AND WILLIAM F. DANIELS.* *Dept. of Bacteriology, Univ. of Cincinnati College of Medicine, Cincinnati, Ohio.*

1581. Inhibition of mouse encephalomyelitis virus, *in vitro*, by certain nucleoprotein derivatives. HAROLD E. PEARSON, DONALD W. VISSER* AND DOROTHY L. LAGERBORG.* *Depts. of Medicine, Microbiology, and Biochemistry, Univ. of Southern California School of Medicine and Lab. Div., Los Angeles County Hosp., Los Angeles.*

1582. Behavior of the viruses of Japanese and Russian encephalitis in rhesus monkeys. J. ANTHONY MORRIS AND JOHN R. O'CONNOR.* *Dept. of Virus and Rickettsial Diseases, Army Med. Service Graduate School, Washington, D. C., and U. S. Wildlife Service, Laurel, Md.*

1583. Cultivation of coxsackie viruses in human tissues. T. H. WELLER, F. C. ROBBINS AND M. B. STODDARD (introduced by JOHN F. ENDERS). *Research Div. of Infectious Diseases, Children's Med. Center, Boston, Mass.*

1584. Synergistic effect of Roentgen radiation and cortisone upon the pathogenicity of coxsachie virus. ASA B. GRAHAM,* ALVAR A. WERDER,* JEROME T. SYVERTON AND JACK FRIEDMAN. *Depts. of Bacteriology and Immunology and of Radiology, Univ. of Minnesota and Mt. Sinai Hosp., Minneapolis.*

1585. The cockroach as a natural extrahuman source of poliomyelitis virus. JEROME T. SYVERTON, ROBERT G. FISCHER,* SIDNEY A. SMITH,* RICHARD P. DOW* AND HERBERT F. SCHOOF.* *Dept. of Bacteriology and Immunology, Univ. of Minnesota, Minneapolis, and Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.*

1586. Poliomyelitis and coxsackie viruses from Egyptian flies. ROBERT WARD. *Dept. of Pediatrics, New York Univ. College of Medicine, New York City, with cooperation of U. S. Naval Med. Research Unit No. 3, Cairo, Egypt.*

Presidential Address. COLIN M. MACLEOD. *New York Univ. College of Medicine, New York City.*

Tuesday Afternoon, April 15, 2:00 p.m.

Viruses

TUESDAY, 2:00 P.M.—STATLER, KEYSTONE ROOM

1587. Poliomyelitis virus in the blood of orally infected monkeys and chimpanzees. DOROTHY M. HORSTMANN. *Section of Preventive Medicine, Yale Univ., New Haven, Conn.*

1588. Pathogenesis of poliomyelitis in normal and passively immunized primates after virus feeding. DAVID BODIAN. *Dept. of Epidemiology, Johns Hopkins Univ., Baltimore, Md.*

1589. Duration of immunity in chimpanzees vaccinated with formalin inactivated poliomyelitis virus. HOWARD A. HOWE. *Johns Hopkins Univ., Baltimore, Md.*

1590. Influence of chemicals on propagation of poliomyelitis in tissue culture. GORDON C. BROWN. *Dept. of Epidemiology and Virus Lab., School of Public Health, Univ. of Michigan, Ann Arbor.*

1591. Alteration in pathogenicity for monkeys of the Brunhilde strain of poliomyelitis virus following cultivation in human tissues. J. F. ENDERS, T. H. WELLER* AND F. C. ROBBINS.* *Research Div. of Infectious Diseases, Children's Med. Center, Boston, Mass.*

1592. Poliomyelitis viruses propagated in tissue cultures as antigens in the complement fixation test. ARNE SVEDMYR,* JOHN F. ENDERS AND ANN HOLLOWAY.* *Research Div. of Infectious Diseases, Children's Med. Center, Boston, Mass.*

1593. Poliomyelitis virus and antibody studies in roller tube cultures of monkey testicular tissue. NADA LEDINKO,* JOHN T. RIORDAN* AND JOSEPH L. MELNICK. *Section of Preventive Medicine, Yale Univ., New Haven, Conn.*

1594. Factors important for the application of roller tube cultures of monkey testicular tissue to quantitative immunologic studies with poliomyelitis viruses. J. S. YOUNGNER, JONAS E. SALK AND ELSIE N. WARD.* *Virus Research Lab., Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1595. Immunization of monkeys with poliomyelitis viruses grown in cultures of monkey testicular tissue. JONAS E. SALK, JAMES L. LEWIS,* BYRON L. BENNETT* AND J. S. YOUNGNER. *Virus Research Lab., Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1596. Complement-fixing antibodies to type 2 poliomyelitis virus in a normal population. NATAN GOLDBLUM* AND JOSEPH L. MELNICK. *Section of Preventive Medicine, Yale Univ., New Haven, Conn.*

Joint Session of the Federation

TUESDAY, 8:30 P.M.—MANHATTAN CENTER, PROMENADE BALLROOM

Program on page 492

Wednesday Morning, April 16, 9:00 a.m.

Viruses

WEDNESDAY, 9:00 A.M.—STATLER, KEYSTONE ROOM

1597. The neutralization of herpes simplex virus by human sera. ERNEST JAWETZ. *Div. of Microbiology and Medicine, Univ. of California School of Medicine, San Francisco.*

1598. Relation of herpes virus to the mitochondria of host cells. W. WILBUR ACKERMANN* (introduced by THOMAS FRANCIS, JR.). *Dept. of Epidemiology and Virus Lab., Univ. of Michigan School of Public Health, Ann Arbor.*

1599. Estimates of particle number, lethal effect and chemical properties of the virus of meningopneumonitis. T. TIMOTHY CROCKER (introduced by KARL F. MEYER). *Div. of Medicine and Hooper Fndn. for Med. Research, Univ. of California School of Medicine, San Francisco.*

1600. Neutralizing antibodies in mumps. WINSLOW J. BASHE, JR.,* TAMAR GOTLIEB,* GERTRUDE HENLE* AND WERNER HENLE. *Children's Hosp. of Philadelphia and Univ. of Pennsylvania, Philadelphia.*

1601. Antigenic analysis of influenza viruses by immune serum neutralization *in ovo*. MAURICE R. HILLEMAN AND FRANK L. HORSFALL, JR. *Hosp. of Rockefeller Inst. for Med. Research, New York City.*

1602. Adaptation of influenza virus to mouse lungs. FRED M. DAVENPORT. *Dept. of Epidemiology and Virus Lab., School of Public Health, Univ. of Michigan, Ann Arbor.*

1603. Inhibitory effects of a fraction from human sputum on influenza virus. HARRY M. ROSE. *Dept. of Bacteriology, Columbia Univ. College of Physicians and Surgeons, New York City.*

1604. Quantitative and morphological aspects of the 'incomplete' growth cycle of influenza virus in mouse brain. R. WALTER SCHLESINGER AND GEORGES H. WERNER (introduced by GEORGE K. HIRST). *Divs. of Infectious Diseases and Applied Immunology, Public Health Research Inst. of The City of New York, Inc.*

1605. Chemical studies on the human erythrocyte receptor of influenza virus. J. F. MCCREA (introduced by B. A. BRIODY). *Lister Inst. of Preventive Medicine, London, England.*

1606. Kinetics of influenza virus hemagglutination-inhibition reactions. FRANK LANNI AND YVONNE THÉRY LANNI.* *Dept. of Bacteriology, Univ. of Illinois, Urbana.*

General Immunology

WEDNESDAY, 9:00 A.M.—NEW YORKER, PARLOR F-G

1607. Effect of urea on antigen-antibody precipitation reactions. JAY BANOVITZ (introduced by DAN H. CAMPBELL). *Gates and Crellin Labs. of Chemistry, California Inst. of Technology, Pasadena.*

1608. Enzymatic aspect of catalase-anticatalase reaction. M. G. SEVAG AND M. ZACCO.* *Dept. of Microbiology, Univ. of Pennsylvania Med. School, Philadelphia.*

1609. Quantitative immunochemical studies on the inhibition of urease by rabbit anti-urease. A. A. MARUCCI* AND M. M. MAYER. *Dept. of Bacteriology, Johns Hopkins School of Hygiene and Public Health, Baltimore, Md.*

1610. Serological differences among native and clinical dextrans. EDWARD J. HEHRE* AND JAMES M. NEILL. *Dept. of Bacteriology and Immunology, Cornell Univ. Med. College, New York City.*

1611. A quantitative study of serological cross reactions of certain *Shigella flexneri* types. SAMUEL B. FORMAL* AND EDGAR E. BAKER. *Dept. of Microbiology, Boston Univ. School of Medicine, Boston, Mass.*

1612. Immunization of human beings with purified Vi antigen derived from *Escherichia coli* 5396/38. MAURICE LANDY AND ESTHER LAMB (introduced by GEOFFREY EDSALL). *Immunology Div., Army Med. Service Graduate School, Walter Reed Army Med. Center, Washington, D. C.*

1613. Immunologic activity of the acid-precipitate in hemolytic streptococcus filtrates (NY5 strain). AARON H. STOCK AND ETHEL VERNEY.* *Dept. of Bacteriology and Immunology, Univ. of Pittsburgh School of Medicine, and Children's Hosp., Pittsburgh, Pa.*

Wednesday Afternoon, April 16, 1:45 p.m.

Viruses

WEDNESDAY, 1:45 P.M.—STATLER, KEYSTONE ROOM

1614. Passive immunity to vaccinia in newborns. I. Placental transmission of antibody. II. Response to vaccinations. C. HENRY KEMPE, A. S. BENENSON AND J. R. JACKSON. *Div. of Pediatrics, Univ. of California School of Medicine, and George Williams Hooper Fndn., San Francisco, Calif.*

1615. Effect of hyaluronidase on the reaction of rabbits to intradermal inoculations of vaccinia virus. B. A. BRIODY AND F. DURAN-REYNALS.* *Dept. of Microbiology, Yale Univ. School of Medicine, New Haven, Conn.*

1616. Effect of heterocyclic and other thiosemicarbazones on vaccinia infection in the mouse. R. L. THOMPSON AND S. A. MINTON, JR.* *Dept. of Microbiology, Indiana Univ. Med. Center, Indianapolis.*

1617. Effect of cortisone on infectious fibroma and infectious myxoma of rabbits. MARGARET H. D. SMITH. *Dept. of Pediatrics, Tulane Univ. School of Medicine, New Orlenas, La.*

1618. Action of methionine in viral infections. DOUGLAS H. SPRUNT, JOHN L. WOOD* AND H. L. SCHUMAN.* *Inst. of Pathology and Div. of Chemistry, Univ. of Tennessee, Memphis.*

1619. Evidence for the propagation of the virus of serum hepatitis in the chick embryo. MILES E. DRAKE,* WERNER HENLE, GERTRUDE HENLE* AND JOSEPH STOKES, JR. *Children's Hosp. of Philadelphia and Univ. of Pennsylvania, Philadelphia.*

1620. Infection of man with avirulent rickettsiae of epidemic typhus (strain E). JOHN P. FOX, MARTHA EVERITT, AND PRAVIN N. BHATT (introduced by JOHN Y. SUGG). *Epidemiology Section, Dept. of Tropical Medicine and Public Health, Tulane Univ. School of Medicine, New Orleans, La.*

1621. Effect of specific therapy on serologic and immunologic response in scrub typhus. FRED H. DIERCKS* AND JOSEPH E. SMADEL. *Army Med. Service Graduate School, Washington, D. C.*

1622. Leptospiral etiology of Fort Bragg fever. W. S. GOCHENOUR, JR., J. E. SMADEL, E. B. JACKSON, L. B. EVANS* AND R. H. YAGER. *Army Med. Service Graduate School, Washington, D. C.*

Symposium: Antigenic Variation of Influenza Viruses and Its Importance in Vaccination

WEDNESDAY, 8:00 P.M.—STATLER, KEYSTONE ROOM

Chairman: T. P. Magill

1623. Demonstration of antigenic variation by serological methods. GEORGE K. HIRST. *Public Health Research Inst., New York City.*

1624. A pattern of antigenic variation. M. R. HILLEMAN. *Army Med. Service Graduate School, Washington, D. C.*

1625. The biological selection of antigenic variants. FRANK L. HORSFALL, JR. *Rockefeller Inst., New York City.*

1626. Significance of antigenic variation in vaccination of man. THOMAS FRANCIS, JR. *Univ. of Michigan School of Public Health, Ann Arbor.*

Immunology Society Business Meeting

WEDNESDAY, 4:00 P.M.—STATLER, KEYSTONE ROOM

Thursday Morning, April 17, 9:00 a.m.

Antibodies

THURSDAY, 9:00 A.M.—STATLER, KEYSTONE ROOM

1627. Effect of irradiation on the universal serologic reaction in rabbits. REUBEN L. KAHN AND HELENE V. PETRENCO.* *Serology Lab., Univ. of Michigan Hosp., Ann Arbor.*

1628. Comparison of precipitin curves of antisera from x-radiated and nonradiated rabbits. PAUL H. MAURER, DAVID W. TALMAGE AND FRANK J. DIXON. *Dept. of Pathology, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1629. Localization of x-ray injury to the initial phases of antibody response. W. H. TALIAFERRO, L. G. TALIAFERRO* AND E. F. JANSSEN.* *Univ. of Chicago, Chicago, Ill.*

1630. The *in vivo* effect of x-irradiation on guinea pig complement. C. COOPER BELL, JR. (introduced by WILLIAM H. TALIAFERRO). *Univ. of Chicago, Chicago, Ill.*

1631. Labeled antigen precipitation as a measure of quantity and avidity of antibody. DAVID W. TALMAGE AND PAUL H. MAURER (introduced by FRANK J. DIXON). *Dept. of Pathology, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1632. Half-life of homologous gamma globulin (antibody) molecules in man, dog, rabbit, guinea pig, and mouse. FRANK J. DIXON, DAVID TALMAGE* AND PAUL H. MAURER.* *Dept. of Pathology, Univ. of Pittsburgh School of Medicine, Pittsburgh, Pa.*

1633. Appearance of diphtheria antitoxin following transfer of cells taken from immunized rabbits. ODD A. WAGER* AND MERRILL W. CHASE. *Dept. of Microbiology, New York Univ. College of Medicine and Rockefeller Inst. for Med. Research, New York City.*

1634. Further observations on the transfer of lymph node cells from rabbits injected with antigens. T. N. HARRIS, SUSANNA HARRIS* AND MIRIAM B. FARBER.* *Children's Hosp. of Philadelphia and Univ. of Pennsylvania, Philadelphia.*

1635. Role of popliteal lymph node cells and splenic cells in the synthesis of diphtheria antitoxin. ABRAM B. STAVITSKY. *Dept. of Microbiology, Western Reserve Univ. Med. School, Cleveland, Ohio.*

1636. Effect of cortisone on nucleoproteins of lymph nodes. EDWARD H. KASS AND MARY I. KENDRICK (introduced by MAXWELL FINDLAND). *Thorndike Memorial Lab. and Harvard Med. School, Boston, Mass.*

Thursday Afternoon, April 17, 2:00 p.m.

Antigens and antibodies

THURSDAY, 2:00 P.M.—STATLER, KEYSTONE ROOM

1637. Localizing properties of antitissue antibodies purified with fractions of cell nuclei. LEONHARD KORNGOLD* AND DAVID PRESSMAN. *Sloan-Kettering Inst., New York City.*

1638. *In vitro* purification of antitissue antibodies. DAVID PRESSMAN AND LEONHARD KORNGOLD.* *Sloan-Kettering Inst., New York City.*

1639. Persistence of C^{14}-anthranil-azo-ovalbumin rabbits. CHARLES F. CRAMPTON,* HERBERT H. RELLER* AND FELIX HAUROWITZ. *Dept. of Chemistry, Indiana Univ., Bloomington.*

1640. Persistence of antigen in the mouse. JOHN O. ERICKSON, DOROTHY M. ARMEN* AND RAYMOND L. LIBBY. *Radioisotope Lab., Wadsworth General Hosp., Veterans Administration Center, and Dept. of Radiology, Univ. of California, School of Medicine, Los Angeles.*

1641. The presence of Forssman antigen in inbred mice. ISRAEL DAVIDSOHN AND KURT STERN.* *Dept. of Pathology, Chicago Med. School, and Mount Sinai Med. Research Fndn., Chicago, Ill.*

1642. Toxins of Pasteurella pestis. K. GOODNER, P. BARTELL AND L. PANNELL. *Jefferson Med. College of Philadelphia, Philadelphia, Pa.*

1643. Purification of the lethal toxin of *Clostridium novyi*. JACOB J. PRUZANSKY (introduced by LOUIS PILLEMER). *Inst. of Pathology, Western Reserve Univ., Cleveland, Ohio.*

1644. Purification of lecithinase (alpha toxin) of *Clostridium welchii*. FLORENCE ROTH,* K. C. ROBBINS* AND LOUIS PILLEMER. *Inst. of Pathology, Western Reserve Univ., Cleveland, Ohio.*

1645. Serum bactericidal activity by the turbidimetric growth assay method. LOUIS H. MUSCHEL* AND HENRY P. TREFFERS. *Dept. of Microbiology, Yale Univ., New Haven, Conn.*

1646. Effect of vaccination and sulfonamide therapy on experimental toxoplasmosis. J. K. FRENKEL (introduced by DOUGLAS H. SPRUNT). *Rocky Mountain Lab., Hamilton, Mont.*

Symposium: Studies of Uses and Value of Human Gamma Globulin

THURSDAY, 8:00 P.M.—STATLER, KEYSTONE ROOM
Chairman: Joseph Stokes, Jr.

1647. Antibodies and gamma globulin. JOHN F. ENDERS. *Research Div. of Infectious Diseases, Children's Med. Center, Boston, Mass.*

1648. Standardization and control of gamma globulin with special reference to measles. CHARLES A. JANEWAY. *Harvard Med. School, Boston, Mass.*

1649. Gamma globulin and poliomyelitis. WILLIAM McD. HAMMON. *Grad. School of Public Health, Univ. of Pittsburgh, Pittsburgh, Pa.*

1650. The use of gamma globulin in viral hepatitis. MILES E. DRAKE. *Children's Hosp. of Philadelphia, and Univ. of Pennsylvania, Philadelphia.*

1651. Possible uses of gamma globulin in other diseases. JOSEPH STOKES, JR. *Children's Hosp. of Philadelphia, and Univ. of Pennsylvania, Philadelphia.*

Friday Morning, April 18, 9:00 a.m.

Tuberculosis and Allergy

FRIDAY, 9:00 A.M.—STATLER, KEYSTONE ROOM

1652. Tuberculous allergy induced in human beings with chemical constituents of the tubercle bacillus. NINE CHOUCROUN. *Cornell Univ. Med. College, Dept. of Public Health and Preventive Medicine, New York City.*

1653. Immunological and hormonal studies on the nature of genetic resistance to tuberculosis. MAX B. LURIE, SAMUEL ABRAMSON,* A. G. HEPPLESTON* AND ARTHUR M. DANNENBERG, JR.* *Henry Phipps Inst., Univ. of Pennsylvania, Philadelphia.*

1654. Effect of ACTH, streptomycin, ACTH and streptomycin on experimental bovine tuberculosis in the rabbit. DAVID T. SMITH AND JAMES M. BACOS.* *Dept. of Bacteriology, Duke Univ. School of Medicine, Durham, N. C.*

1655. Antigenic properties associated with arlacel-A (mannide oleate). PHILIP Y. PATERSON,* BETTY SMITHWICK* AND LEWIS THOMAS. *Dept. of Medicine, Tulane Univ. School of Medicine, New Orleans, La., and Dept. of Virus and Rickettsial Diseases, Army Med. Service Graduate School, Washington, D. C.*

1656. Experimental disseminated encephalomyelitis produced in mice by proteolipide A and B (Folch and Lees). CHLOE TAL* AND PETER K. OLITSKY. *Rockefeller Inst. for Med. Research, New York City.*

1657. Correlation between protein combining capacity and ability of haptens to provoke delayed allergic skin responses. HERMAN N. EISEN, SIDNEY BELMAN* AND LEO ORRIS.* *Inst. of Industrial Medicine, New York Univ. Postgraduate Med. School, New York City.*

1658. Change in allergenicity of modified foodstuffs, determined in man. BRET RATNER, SAMUEL UNTRACHT* AND CECIL COLLINS-WILLIAMS.* *Depts. of Pediatrics and Immunology, New York Med. College, New York City.*

1659. Carditis in the generalized Shwartzman reaction produced with group A streptococci. LEWIS THOMAS, FLOYD DENNY* AND JOAN FLOYD.* *Research Lab. of the Heart Hosp., Dept. of Pediatrics, Univ. of Minnesota Med. School, Minneapolis.*

1660. Action of ACTH and cortisone on anaphylactic shock in the guinea pig. STANLEY MARCUS, JOHN H. CARLQUIST,* DAVID M. DONALDSON* AND GERALD M. CHRISTENSON.* *Dept. of Bacteriology, Univ. of Utah College of Medicine, and Latter Day Saints Hosp., Salt Lake City, Utah.*

Friday Afternoon, April 18, 1:45 p.m.

Complement and General Immunology

FRIDAY, 1:45 P.M.—STATLER, KEYSTONE ROOM

1661. Spontaneous and therapeutically induced alterations of serum complement in the nephrotic syndrome. FRANK GRAIG, KURT LANGE, LAURENCE SLOBODY AND JACOB OBERMAN (introduced by M. G. MULINOS). *Depts. of Medicine and Pediatrics New York Med. College, New York City.* (Pharmacol.)

1662. Studies in complement-fixation. III. Influence of normal serum constituents in the reaction with syphilitic serum and cardiolipin antigen. JOHN F. KENT. *Dept. of Serology, Army Med. Service Graduate School, Washington, D. C.*

1663. Hemolysis with complement of intact azo-erythrocytes sensitized with antisera homologous to the attached azo-grouping. ARTHUR M. SILVERSTEIN* AND FRANK MALTANER. *Div. of Labs. and Research, New York State Dept. of Health, Sloan-Kettering Inst. for Cancer Research, New York City.*

1664. Further kinetic studies on immune hemolysis with special regard to the quantitative determination of hemolytic antibody. M. M. MAYER, C. C. CROFT,* L. LEVINE* AND A. A. MARUCCI.* *Dept. of Bacteriology, Johns Hopkins School of Hygiene and Public Health, Baltimore, Md.*

1665. Purification and immunochemical characterization of the alcohol-soluble, heat-stable hemolytic antibody-inhibiting hapten from sheep erythrocytes. H. J. RAPP,* F. A. H. RICE* AND M. M. MAYER. *Dept. of Bacteriology, Johns Hopkins School of Hygiene and Public Health, Baltimore, Md.*

1666. Purification of serologically active princi-

ples, particularly protein and polysaccharides, from Trypanosoma cruzi. ARDZROONY PACKCHANIAN. *Dept. of Bacteriology and Lab. of Microbiology, Univ. of Texas School of Medicine, Galveston.*

1667. Chemical modification of a natural plant agglutinin. WILLIAM C. BOYD. *Boston Univ. School of Medicine, Boston, Mass.*

1668. Preparation and use of stroma of normal and trypsinized human red blood cells for quantitative hemagglutination studies. HENRY J. WINN,* MATTHEW C. DODD AND CLAUDE-STARR WRIGHT.* *Depts. of Medicine and Bacteriology, Ohio State Univ., Columbus.*

1669. Phagocytosis of normal, sensitized and trypsinized erythrocytes by tissue culture macrophages. NOREEN G. BRANDT,* JOSEPH A. BASS,* MATTHEW C. DODD AND CLAUDE-STARR WRIGHT.* *Depts. of Medicine and Bacteriology, Ohio State Univ., Columbus.*

PAPERS READ BY TITLE

1670. Folin-Wu preparation of blood group specific substance A. EARLE B. GERHEIM, GEORGE A. LOGWOOD* AND HORACE M. FLOYD.* *Div. of Research, Univ. of Detroit School of Dentistry, Detroit, Mich.*

EXHIBITS

The Industrial, Scientific and Member Exhibits will be located on the Ballroom Floor of the Hotel Statler. Inspection periods will be as follows: Monday, April 14, 1:00 to 8:00 p.m.; Tuesday, Wednesday and Thursday, April 15–17, 9:00 a.m. to 5:30 p.m.; Friday, April 18, 9:00 a.m. to noon.

Industrial Scientific Exhibits

Abbott Laboratories, North Chicago, Ill. (*Booth 13*) will for the first time show their 'Radioactive Pharmaceuticals.' These are a group of radioactive preparations, designed primarily for use in medicine and in biological research. Included are I-131 (tracer and therapeutic), P-32, Diiodofluorescein for brain tumor studies, tagged serum albumin for blood volume determinations and a group of S-35 tagged amino acids.

Academic Press, Inc., New York City (*Booth 67*) cordially invites visitors to browse and inspect new and forthcoming publications, which include the first volume of *International Review of Cytology* edited by Bourne and Danielli; the Leonor Michaelis memorial volume, *Modern Trends in Physiology and Biochemistry*, edited by Barron; *Bioluminescence*, by E. N. Harvey, and *The Mitotic Cycle*, by Arthur Hughes. Other additions to the Academic Press list are represented by the last part of *The Enzymes*, under the editorship of Sumner and Myrback; *Bacterial Physiology*, edited by Werkman and Wilson, and a new journal, *Experimental Parasitology*. Virtually all of the series of *Advances* have been enlarged by a new volume, thus helping the scientist to keep abreast of developments in his particular field of endeavor. The display of the Press' affiliated firm, Johnson Reprint Corporation, will clearly indicate its program and future projects.

Aloe Scientific, St. Louis, Mo. (*Booths 87, 88, 89*) will display modern and new instruments of interest to biochemists, physiologists, pharmacologists and workers in the field of radioisotopes. They will also exhibit the latest Aloe Steel Moduline Sectional Furniture; working demonstration of the de Fonbrune Micromanipulator and Micro Forge; special scintillation counters; automatic scalers, etc. A complete technical staff will be on hand to be of service to those in attendance.

American Instrument Company, Inc., Silver Spring, Md. (*Booths 83 and 84*). An unusual number of new instruments will be added to Aminco apparatus this year. In electrophoresis the improved Universal Research Model features a removable ultracentrifuge for the Gofman lipoprotein test. The latest portable model will also be on exhibit. Other new appliances for biochemical research are a novel shaker for attachment to constant temperature baths, the French pressure cell for colloidal dispersal of chloroplast and other biological materials, and the Aminco Durpolast tissue homogenizer. Among major tools of recent design are the high-speed angle centrifuge, the Barclay flame Photometer, the Aminco Light-Scattering Apparatus, and a photomultiplier microphotometer. On view will be the well-known Aminco Warburg Apparatus, Micro-Kjeldahl Apparatus, the Compax pH Electrometer, Coleman spectrophotometers, pipetting machine, and a special circulating bath.

American Optical Company, Buffalo, N. Y. (*Booths 39 and 40*).

The American Tobacco Company, Richmond, Va. (*Booths 60 and 61*). This Company's Research Laboratory will demonstrate a newly developed recording automatic cigarette weighing balance which utilizes a servo mechanism. This instrument eliminates the human factor in the determination of cigarette weights on a laboratory scale. Original applications of well known principles such as this result in closer control of quality of manufacture. The exhibit will also include samples of cigarette tobaccos, suitably labelled and described, and a display showing steps in the manufacture of cigarette paper from virgin flax.

The Armour Laboratories, Chicago, Ill. (*Booth 56*). In keeping with its policy of serving science and medicine, the Research Department will present the following specialty items for experimental use: Purified hormones and enzymes of animal origin, liver and plasma fractions, enzyme substrates, cofactors and inhibitors, animal lipids, reference compounds and other fine biochemicals. A research investigator will answer your questions concerning the chemical, physical, and biologic properties of such compounds.

Association of American University Presses, New York City (*Booth No. 69*) has arranged a cooperative exhibit at their booth for your enjoyment at this meeting—and to give you an opportunity to purchase some of the important titles for your library. Books from University Presses are

distinguished for authoritative content and excellence of editorial work and claim enviable rank among non-fiction and technical publications.

Bausch & Lomb Optical Co., Rochester, N. Y. (*Booth 17*). The new dynoptic microscopes with exclusive features for easier operation will be available for your use. The B & L Grating Monochromator for UV, visible and infra-red will be in operation with the Gray Reflecting objective. Research, wide field and phase contract microscopes as well as photomicrographic equipment are to be demonstrated. You are welcome to discuss any optical problem with their representatives at the booth.

J. Beeber Company, Inc., New York City (*Booth 57*).

Bilhuber-Knoll Corp., Orange, N. J. (*Booth 24*) will present an exhibit of teaching aids together with reprints and bulletins describing research on the chemistry and pharmacology of the aliphatic amines and amino alcohols, the tetrazoles, and derivatives of aliphatic acids. The compounds include cardiac stimulants, pressor substances, antispasmodics, convulsants, and depressants. Drs. Hauck and La Forge and Mr. Chadwick will be in attendance.

The Blakiston Company, Philadelphia, Pa. (*Booth 54*) cordially invites you to visit its booth, where you will find such outstanding titles as Gray's *Handbook of Basic Microtechnique;* Dible's *Recent Advances in Bacteriology;* Davson's *General Physiology;* and Martin's *Biological Antagonism.* New material will be available on Nelsen's *Comparative Vertebrate Embryology* and Thomas and Grainger's *Bacteria,* both in preparation.

S. Blickman, Inc., Weehawken, N. J. (*Booth 11*).

C. A. Brinkmann & Co., (formerly Gamma Scientific Company) Great Neck, L. I., N. Y. (*Booth 53*) will display an interesting selection of scientific instruments and laboratory apparatus. Among other items, there will be displayed the new Oertling air-damped, microgram balance, research polarimeters, Sartorius Selecta, fast semi-automatic analytical balance, new type Abbe and Pulfrich refractometers, photomicrographic equipment and micro manipulators.

Camel Cigarettes, New York City (*Lounge*).

Clay-Adams Company, Inc., New York City (*Booth 27*) will exhibit materials of interest in physiological research such as plastics and couplers for experimental surgery. They will also show the most recent developments in laboratory apparatus. Another section of the exhibit will be devoted to Medichromes (2 x 2″ 35 mm. Kodachromes), anatomical models, and skeleton and bone preparations.

The Coca-Cola Company, Atlanta Ga., (*Lounge*). Ice-cold Coca-Cola will be served through the courtesy and cooperation of the New York Coca-Cola Bottling Company and the Coca-Cola Company.

The Coleman & Bell Company, Inc., Norwood, Ohio (*Booth 74*). This exhibit will consist of carefully selected items of interest to those attending this meeting; we will show representative samples of our reagent laboratory chemicals, biological stains and chemical indicators, dry and in solution, diagnostic solutions, test papers and related miscellaneous items. Literature and catalogs will be available.

Corning Glass Works, Corning, New York (*Booth 72*), will display Pyrex Brand laboratory glassware for biological use—including petri dishes, culture tubes, bacteriological filters and pipettes.

Edin Company, Inc., Worcester, Mass. (*Booths 51 and 52*) will exhibit the Edin Council-accepted 400A Series Electroencephalographs, along with Model 220 Electrocardiograph. Also displayed will be medical research equipment, such as ink-writing oscillographs and research amplifiers. This Company has pioneered many medical research instruments and their engineers welcome your inquiries.

General Scientific Equipment Co., Hamden, Conn. (*Booths 90 and 91*) will display the Barclay Flame Photometer for the rapid and precise determination of sodium and potassium, and the Patwin Electro-Polarizer, a precision instrument for precise polarographic analysis. Companion pieces as part of the display graphically illustrate the principles of operation of the two instruments. Both instruments are designed and built to fulfill the needs of the most meticulous analyst.

Grass Instrument Company, Quincy, Mass. (*Booths 31 and 32*) will display stimulators, preamplifiers and cameras for cathode-rays; cortical, depth and stimulating electrodes; equipment for measuring pressures by strain-gauge techniques; stimulus isolation units; and other devices which are designed specifically for use in electro-physiological techniques.

Grune & Stratton, Inc., New York City (*Booth 71*). Among the many new publications to be exhibited at their booth will be the following of special interest: *Metabolism—Clinical and Experimental,* a new bimonthly journal; Whitby and

Hynes' *Medical Bacteriology;* Schapiro's *Manual of Parasitology;* Gillman and Gillman's *Perspectives in Human Malnutrition;* and *Proceedings of the Third International Society of Hematology*, edited by Moore.

Hamilton Bell Co., Inc., Paterson, N. J. (*Booth 78*). *The little things*—For want of a nail the battle was lost. And so it is with your laboratory equipments. You may have the big equipment; but don't overlook the right forceps, scalpels, scissors or other instruments for the job you are doing. It may only take a special but small inexpensive tool to make the result perfect, so stop by this Company's booth and see their display.

Paul B. Hoeber, Inc., New York City (*Booth 15*). The Medical Book Department of Harper & Brothers will display its full array of distinguished books. Among the new titles of interest to Federation members are Samuels & Fuchs' *Clinical Pathology of the Eye*, Reese's *Tumors of the Eye*, Milbank Memorial Foundation's *Biology of Mental Health and Disease*, Grace, Wolf & Wolff's *The Human Colon*, Vorwald's *Pneumoconiosis*, and Jolliffe, Tisdal & Connon's *Clinical Nutrition*, as well as new editions of McClung's *Handbook of Microscopical Technique*, Parker's *Methods of Tissue Culture*, Babkin's *Secretory Mechanism of the Digestive Glands* and Saphir's *Autopsy Diagnosis*. Be sure to visit *Booth 15*.

Interscience Publishers, Inc., New York City (*Booth 47*) will display all the new and standard books of Interscience. One of the outstanding new publications, the first volume of the two-volume work, *The Lipids: Their Chemistry and Biochemistry*, by Harry J. Deuel, Jr., will be featured, along with such outstanding works as the current volumes of *Advances in Enzymology;* Brachet's *Chemical Embryology;* Kertesz's *The Peptic Substances;* Uber's *Biophysical Research Methods;* Burger's *Medicinal Chemistry, Volumes I and II;* Boyd's *Immunology;* Mommaerts' *Muscular Contraction;* Glick's *The Techniques of Histo- and Cytochemistry; Methods of Vitamin Assay;* Jacobs' *The Chemistry and Technology of Food and Food Products, Volumes I, II and III;* and many other outstanding works in biochemistry, physiology, medicine, food, fats and oils, and other related fields. The new 1952 catalog describing all publications will also be available for free distribution at the booth.

Keystone Plastics Company, Swarthmore, Pa. (*Booth 37*) will display a new style patented 'Mouse House' of clear, transparent plastic with a perforated stainless steel cover. This laboratory cage is moulded in one piece, like a rectangular glass baking dish, with smooth rounded corners, offering better visibility—an advantage in research where frequent inspection of the animal is desired. The plastic cages are also vermin-proof and easily cleaned. They can be sterilized with various chemicals, including one developed by Keystone Plastics Co. The exhibit will include a variety of styles and sizes for rats, mice, hamsters, etc.

Kimble Glass, Division of the Owens-Illinois Glass Co., Toledo, Ohio (*Booth 59*), will exhibit a representative line of Kimble laboratory glassware, including volumetric and calibrated apparatus. Products bearing the well-known trademarks Exax, Normax, and 'K' brand will be included, as well as the Kimble Blue Ring Yellow Back Thermometer.

Lakeside Laboratories, Inc., Milwaukee, Wisc. (*Booths 33 and 34*) will display some of the conclusions of a six-year study of new diuretic agents. The chemistry, pharmacology and clinical trial of these agents will be displayed. Members of Lakeside Laboratories' Scientific Department will be on hand to discuss these projects.

Lea & Febiger, Philadelphia, Pa. (*Booth 21*), welcome you to their exhibit. You will find their latest publications in the fields of bacteriology, chemistry, nutrition, pharmacology, physiology, zoology, etc. Be sure to see *Elements of Human Physiology* by Lucas, *Physiology in Health and Disease* by Wiggers and the enthusiastically accepted *Pharmacology and Therapeutics* by Grollman. Don't miss the new Musser-Wohl *Internal Medicine*.

E. Leitz, Inc., New York City (*Booth 32*) will exhibit and demonstrate microscopes, photoelectric colorimeters and other scientific instruments, including the renowned Ortholux research microscope with the newly designed Aristophot arrangement for photomicrographic and photomacrographic accessories for film sizes from 35 mm. to $3\frac{1}{4}$ x $4\frac{1}{4}$". The Panphot universal camera microscope with combination illumination system which may be adapted for biological, metallurgical and polarized light, either transmitted or reflected, will also be demonstrated.

J. B. Lippincott Company, Philadelphia, Pa. (*Booth 55*) will present for your approval a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

E. Machlett & Sons, New York City (*Booth 35*) will feature a diversified group of scientific ap-

paratus, laboratory glassware and apparatus. Included are a number of recently designed instruments and laboratory devices. They will also display products of their precision glass blowing department, including new designs and experimental laboratory glassware of high precision and skilled workmanship. Their technical staff will gladly furnish information and discuss your problems.

The Macmillan Company, New York City (*Booth 18*) invites your attention to recently revised editions of the following outstanding titles: White's *Heart Disease*, Smillie's *Preventive Medicine and Public Health*, and Riseman's *PQRST*. Here also will be displayed one of the newest, and already one of the most popular, of all medical education books, West and Todd's *Textbook of Biochemistry*.

McGraw-Hill Book Company, Inc., New York (*Booth 26*) invites you to examine at its booth a selected list of medical and scientific books. Specially featured are Houssay's *Human Physiology*, a world-famous text; De Vries' *German-English Medical Dictionary;* Siri's *Isotopic Tracers and Nuclear Radiation with Applications to Biology and Medicine;* Hicks and Warren's *Introduction to Neuropathology;* Zirkle's *Biological Effects of External Beta Radiation*, and Mitchell's *Textbook of Biochemistry*.

Merck & Company, Inc., Rahway, N. J. (*Booths 76 and 77*) will feature N-allylnormorphine (Nalline), a narcotic antagonist with little or no analgesic effect of its own. Although derived from morphine, it is an antagonist to morphine and to other drugs with similar pharmacologic action. Its chemical and physical properties, pharmacologic actions toxicity and clinical uses will be shown in chart form.

Metro Industries, Long Island City, N. Y. (*Booths 98 and 99*). This Company's exhibit will include important additions to Metroware line of small-scale organic glass equipment; new and ultra-sensitive flowmeter for coronary perfusion; Photoelectric-Tensometer for indirect blood pressure measurements; and other laboratory instruments.

Philip Morris & Co., Ltd., Inc., New York City (*Booth 46*) will show the results of research on the irritant effects of cigarette smoke. An interesting demonstration will be made on smokers at the exhibit which will show the difference in cigarettes.

The C. V. Mosby Company, Saint Louis, Mo. (*Booth 62*) extend a cordial invitation to all those attending this year's meeting to visit their booth where they are happy to display once again their publications. A wide selection of books for teaching and reference purposes will be available for examination. Whether you wish to browse, discuss book requirements, or just say hello, their representatives will welcome your visit.

National Drug Company, Philadelphia, Pa. (*Booth 50*) will illustrate in their display the use of exchange resins in therapy, and will feature five of the company's products in this field. The display will include descriptive literature, illustrative wall placards and actual samples of the material being described.

New Brunswick Scientific Company, New Brunswick, N. J. (*Booth 86*), will display the Rotary Action Flask Shaker, a versatile shaking apparatus which imparts superior performance in research on antibiotics, fermentation requiring aeration and in general laboratory work. It is quiet and smooth operating, non-creeping, corrosion-resistant and has a variation of speeds from 160 to 400 oscillations per minute.

Nuclear Instrument & Chemical Corp., Chicago, Ill. (*Booth 68*), will feature in their exhibit biosynthesized radioactive chemicals of particular interest to biologists. Radiation detecting and measuring instruments such as scalers, count rate meters, scintillation detectors and flow counters for use in research laboratories doing work with radioactive isotopes will also be displayed.

The Perkin-Elmer Corporation, Norwalk, Conn. (*Booth 75*) will exhibit an infrared spectrophotometer which is finding wide usage in the medical and pharmaceutical fields at the present time. The instrument is used for quantitative and qualitative analysis on organic materials of all types. Also exhibited will be an infrared microscope attachment of this instrument which enables analyses to be made on extremely small samples and on single crystals. Various other attachments such as microcells and polarizer attachments will also be shown. A Tiselius Electrophoresis Apparatus which is compact and versatile enough for clinical applications will also be displayed.

Phipps & Bird, Inc., Richmond, Va. (*Booth 25*), will feature two new instruments that have been long awaited by pharmacologists. Their new perfusion pump, which is used to circulate blood to isolated organisms, is built so that the volume may be varied from ½ to 50 cc. Also available will be a selection of set speeds. Another big feature of this pump is the fact that it completely empties itself on each stroke. Following close behind in this dual billing is the new infusion pump. This is used for the infusion of drugs or other chemicals and is manufactured so these drugs may be introduced at variable rates. Also present will be a complete line

of kymographs, levers and other tools which are so sure to be of great interest to the biophysicist.

Prentice-Hall, Inc., New York City (*Booth 85*), will display selected titles from all technical series, including the just published *Chemistry of Metal Chelate Compounds* by Arthur Martell and Melvin Calvin and the new Second Edition of *Oxidation Potentials* by Wendell Latimer. Specially featured will be *The Biotic World and Man* by Lorus J. and Mergery J. Milne, publication of which has been arranged to coincide with the convention, and numerous examination copies will be on hand.

Radiation Counter Laboratories, Inc., Skokie, Ill. (*Booth 42*) announces the arrival of their Twin Scaler and 'Combo'—two of the most versatile instruments available. Relocation in their new plant with increased production facilities permits special glass apparatus work in lime, Nonex, Pyrex and Vycor. Note large array of Geiger-Mueller proportional and scintillation detectors with available accessories.

Radio Corporation of America, Camden, N. J. (*Booths 79, 80, 81, and 82*) will feature outstanding examples of the RCA line of scientific equipment, including the latest Table Model Electron Microscope, some of the newest biological and medical micrographs and RCA industrial television featuring three dimensional television microscopy. Another attraction will be the new Shadowcaster designed especially to prepare shadowcast specimens for the Electron Microscope. The RCA booth will be fully manned by qualified technical personnel who will demonstrate the equipment and answer any questions concerning it.

Ralston Purina Company, St. Louis, Mo. (*Booth 9*).

O. C. Rudolph & Sons, Caldwell, N. J. (*Booth 4*) will exhibit their Photoelectric Polarimeter, High Precision Model, which has the following outstanding features: reads directly to 0.002° arc; estimates to 0.001° arc; has interchangeable attachments for visual observations and interchangeable sodium and mercury lamps, allows equal or better precision than corresponding visual measurements without need of a darkroom; reduces eye fatigue. This exhibit will also display Visual Polarimeter, Utility Model.

Sanborn Company, Cambridge, Mass. (*Booth 70*) will show several of the Sanborn 'family' of inkless recording equipment for biophysical research, from the single-channel recorder and associated DC and strain gage amplifiers to the versatile, multi-channel Poly-Viso. Full data will also be available on such supplementary instruments and attachments as the Electromanometer, Ballistocardiograph, Pulse Wave Attachment, and several others.

Sandoz Pharmaceuticals, New York City (*Booths 22 and 23*) invite you with a great deal of pleasure and pride to visit their scientific exhibit, which will feature: *1*) disturbances of the autonomic nervous system; *2*) vascular headaches—mechanism, diagnosis and treatment; *3*) the management of postpartum hemorrhage. Their representative in this area, Mr. S. S. Allar, will gladly welcome you at their booths.

W. B. Saunders Company, Philadelphia, Pa. (*Booth 16*) cordially invites you to visit its exhibit and inspect text and reference books in the field of chemistry, anatomy, physiology, biochemistry, bacteriology, zoology, nutrition and pharmacology. See these new ones: Callander's *Surgical Anatomy;* Salter's *Pharmacology;* Maximow & Bloom's *Histology;* Mainland's *Medical Statistics* and other important new books.

Ivan Sorvall, Inc., New York City (*Booth 36*) will display their Servall Angle Centrifuges, Sterling Automatic Pipettes, Servall Magnetic Stirrers with heating plates and the Original-Odhner Calculators. Exhibited for the first time are the new Servall Refrigerated Centrifuge, the Hansell Ultrasonic Generator and the Servall Omni-Mixer.

E. R. Squibb & Sons, Long Island City, N. Y. (*Booth 58*).

C. H. Stoelting Company, Chicago, Ill. (*Booth 41*).

The Technicon Company, New York City (*Booths 63, 64, 65 and 66*) will show: *For Pathologists and Histologists:* The Autotechnicon, histologic reagents, Lab-aid filing cabinets, paraffin knife, constant temperature water bath, microslide dryer, and Scopicon. Featured will be the new Scopicon Microscope Lamp for visual microscopy and photomicrography. *For Biochemists:* The Technicon automatic fraction collector (both time and drop count control), automatic pipette washer, and the new Technicon micro pump. *For Cardiologists:* The Technicon cardiograph, featuring Technicon equipment for vector-cardiography.

Arthur H. Thomas Company, Philadelphia, Pa. (*Booths 48 and 49*).

Charles C Thomas, Springfield, Ill. (*Booths 19 and 20*). Don't miss Charles C Thomas · Publisher's double spread of new and outstanding books in these fields. Many titles not previously announced in the American Lecture Series will be on display: Wall's *Practical Blood Grouping*

Methods; Andrew's *Cellular Changes with Age;* Conway's *Biochemistry of Gastric Acid Secretion;* Jukes' *B-Vitamins for Blood Formation;* Noble's *Electrical Methods of Blood Pressure Recording,* and others.

Tracerlab, Inc., Boston, Mass. (*Booths 44 and 45*) will display a line of new scalers and ratemeters and an automatic sample changer set-up consisting of an Automatic Sample Changer, Autoscaler and Tracergraph. Also shown will be monitoring and personnel safety equipment, film badges and other health physics equipment. A new high frequency gamma scintillation counter will be displayed as will the firm's windowless flow counter.

Walden Industries, Inc., New York City (*Booth 29*), will display 'Quick-Clix' clinical photographic outfits which will interest doctors and surgeons. Quick-Clix is a compact, light-weight assembly, combining camera mount, high intensity dual illumination source, remote control aperture and shutter operating mechanism, synchronized to facilitate the taking of finer color photographs with unprecedented accuracy, simplicity and speed. There are Quick-Clix units available with either incandescent lighting or with a dual Stroboscopic electronic flash.

Waters Conley Company, Rochester, Minn. (*Booth 43*) will feature two new oximeter instruments for measuring oxygen saturation in blood. One model will give simultaneous single scale and double scale readings with either earpiece or cuvette; the other will permit single scale readings from both the earpiece and cuvette operating simultaneously. Also featured will be a new EKG-cardiotachometer permitting continuous and simultaneous heart rate and EKG indications. Other electro-medical instruments will be exhibited.

John Wiley & Sons, Inc., New York City (*Booth 73*) will feature many new titles of particular interest to specialists in the field. Among them will be: *National Research Council Symposium on Radiobiology,* edited by J. J. Nickson; *A Study of Antimetabolites,* by D. W. Woolley; *Understanding Heredity,* by R. B. Goldschmidt and the new *volumes III* and *IV* of Elderfield's *Heterocyclic Compounds.* Wiley's booth will also contain advance proofs of C. R. Rao's new book on *Biometric Research,* and all of their current titles in the biological sciences.

The Year Book Publishers, Inc., Chicago, Ill. (*Booth 12*) will display many books of special interest. You are cordially invited to make leisurely examination. The new, just-published *Volume 5* of *Methods in Medical Research* will be available; also the preceding four volumes in this unique and valuable series. *Medical Physics,* edited by Otto Glasser and now in two volumes, is a work of supreme authority and tremendous usefulness. Dr. Carl A. Moyer's new *Manual on Fluid Balance* will be found decidedly timely and worthwhile. Another new book of special interest will be Youmans' *Basic Medical Physiology,* a very unusual and practical presentation. The Year Book representative will be pleased to point out many other volumes of importance.

Member Exhibits

Electrogenic substances *in vitro* and *in vivo.* Reinhard H. Beutner. New England College of Pharmacy, Boston, Mass. Electric potential differences essential for vital functions may arise through contact of equeous and lipoidal structures in tissues. Phase boundary potential differences investigated in vitro show electrogenic effect of acetylcholine and other neuro-hormones, electrogenic specificity of cholinergic and adrenergic drugs and differentially staining structures as electrogenerators.

Measurement of heart contractile force. O. J. Brodie,* K. J. Boniface* and R. P. Walton, Med. College of South Carolina, Charleston. Apparatus is displayed for *in situ* measurement of contractile force of a section of the ventricle. Strain analyser equipment permits measurement in chronically operated animals. Related equipment for measurement of heart size changes is displayed along with a special type pump for drug infusions.

The pneumatic refractometer. H. G. Clamann (introduced by O. O. Benson, Jr.), USAF School of Aviation Medicine, Randolph Air Force Base, Tex. A new apparatus to obtain fast recordings of changes in composition of gas mixtures is displayed. The refractive index of a gas is proportional to its density. Changes in refraction affect the brightness of an image and thus the output of a photocell.

Capillary fragility and stress; pharmacological value of flavonoids. Southern Bio-Research Lab., Florida Southern College, Lakeland. Experimental and clinical evidence is shown that flavonoids increase tolerance to ionizing radiation in a total body or in contact application; exert a moderate inhibitory effect on growth of transplanted tumors, not interfering with the destructive action of x-rays on malignant tissue; and counteract effect of bacterial polysaccharide on capillaries.

Negative ionization in health and disease. Florida Southern College, Lakeland. Negative ionization, 10,000 ions/cc. of air, increases resistance to malignant growth in rats and mice, bearers of Crocker Carcinoma, Rat Carcinoma 175-G, Mouse Sarcoma 180, spontaneous cancer of the lung, Family A. It increases maze learning property in older rats as tested by T-Stone maze and stimulates effect on glandular system under certain conditions.

Vitamin C-free diet in experimental malignancy. Boris Sokoloff* and W. H. Eddy, Southern Bio-Research Lab., Florida Southern College, Lakeland. A scorbutogenic diet to which *d*-glucoascorbic acid is added, increases the radiosensitivity of animal tumors, bringing down the ascorbic acid content and decreasing the number of white blood cells in Ak leukemic mice. Three thousand or 5000 r contact radiation destroys completely 2 cm.^{3} size tumor of mice kept on this diet.

Flavonoids in radiation therapy. Dept. of Radiation Therapy, Harlem City Hosp., New York City. Flavonoids give considerable protection against a total body radiation and increase tolerance against contact radiation of rats, bearers of Crocker Rat Carcinoma. Flavonoids given for 10 days, 600 mg. daily, prevent injury to the capillary wall of the nail-bed submitted to 200 r in a single dose. They decrease radiation erythema increasing the tolerance to radiation therapy.

Cardiac conditional reflexes. W. Horsley Gantt, Ross Dykman,* J. E. Peters,* W. H. Harris* and Joseph Stephens,* Johns Hopkins Univ., Baltimore, and Veterans Admin. Hosp., Perry Point, Md. Excitory or inhibitory cardiac conditional reflexes can be established as quickly as motor or salivary conditional reflexes. Their relation to time intervals, pain, food, sexual stimuli and presence of another individual and the delicacy of measure of excitation or inhibition by cardiac conditional reflexes are shown.

Shock. William H. Govier, Pharmacology Research, Upjohn Company, Kalamazoo, Mich.

Low pressure portion of the cardiovascular system and blood volume control. O. H. Gauer, J. P. Henry,* H. O. Sieker* and W. E. Wendt, Aero Medical Laboratory, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio. The low pressure system of the circulation consisting of the pulmonary bed, right heart and venous system is viewed as one functional unit. The sequence of physiological events controlling blood volume is demonstrated by charts and models.

A procedure for determining the diffusion constant of gases through membranes. John E. Kirk and Svend G. Johnson,* Div. of Gerontology, Washington Univ. School of Medicine, St. Louis, Mo. An apparatus is employed consisting of 2 glass syringes with bottoms replaced by rings between which the membrane is inserted. The syringes are filled with solutions of known gas content. At intervals samples are transferred through outlets near the membrane to the chamber of a Van Slyke apparatus for gas analysis.

Local cold injury—frostbite. R. B. Lewis (introduced by Herman Chinn), USAF School of Aviation Medicine, Randolph Air Force Base, Tex. Each of 8 colored transparencies in illuminated boxes depict a separate phase of experimental frostbite injury, namely: sequence of increasing cold injury, pathogenesis of muscle necrosis due to frostbite, beneficial results of rapid thawing of frostbitten rabbit legs, nephrosis secondary to frostbite and comparison of injuries produced by frostbite, burns and occlusive tourniquets.

Effect of faradic stimulation of the popliteal nerves on the caliber of renal arteries in unanesthetized man. N. S. R. Maluf, Columbia-Presbyterian Hosp., New York City. Translumbar abdominal arteriogram with the subject in prone position before and after 15–20 min. tetanic stimulation of the central popliteal nerve is shown. Radiograms and kodachromes are displayed.

Recording oximeters for tests of pulmonary function, for use during surgery and for teaching respiratory physiology. J. F. Perkins, Jr., William E. Adams,* Huberta Livingstone,* W. H. Johnson,* R. A. Weaver* and W. W. Webber, Dept. of Physiology and Surgery, Univ. of Chicago, Chicago, Ill. Recording oximeters assembled by student technicians and utilizing the Millikan-Coleman (relative reading) oximeter earpiece or the Wood-Waters-Conley (absolute reading) earpiece will be displayed, together with graphs showing their use on patients and animals.

Improvements in an integrated model of the cardiovascular system. Simon Rodbard, Cardiovascular Dept., Michael Reese Hosp., Chicago, Ill. Additions to the model which will be demonstrated are a demonstration of flow patterns in the coronary system, Bernoulli's principle as applied to flow in elastic tubes with special reference to production of vascular stenosis, principles in genesis of varicosities and mechanism of Korotkoff sounds.

Studies of the mechanism of calcification. A. E. Sobel, A. Hanok,* A. Hirschman,* H. Golden-

berg* and I. Fankuchen,* Jewish Hosp. of Brooklyn, State Univ. College of Medicine and Polytechnic Inst. of Brooklyn, Brooklyn, N. Y. The exhibit consists of recent studies showing the relationship both *in vivo* and *in vitro* between solid and liquid (composition and crystal state). A relationship between the composition of teeth and caries susceptibility will be indicated. Furthermore, recent studies on survival of calcifying mechanism *in vitro* are shown.

Publications of the Federated Societies. Journals and books published by the member Societies of the Federation and by Annual Reviews, Inc., will be on display. Included among the journals are *The American Journal of Physiology, Journal of Applied Physiology, The Journal of Biological Chemistry, The Journal of Immunology, The Journal of Nutrition, The Journal of Pharmacology and Experimental Therapeutics, Pharmacological Reviews* and *Physiological Reviews*. The books are *Annual Review of Biochemistry, Annual Review of Physiology,* and other publications of Annual Reviews, Inc. An attendant will be present to give information and to receive subscription orders.

DIRECTORY OF COUNCIL AND COMMITTEE MEETINGS AND SPECIAL FUNCTIONS

Sunday, April 13

Meetings

Federation Executive Committee—6:00 P.M. (*Room 129, Hotel Statler*)
Physiological Society Council—9:00 A.M.; 1:00 P.M. (*Room 112, Hotel Statler*)
Biochemistry Society Council—9:00 A.M.; 1:00 P.M.; 7:30 P.M. (*Parlor A, Hotel New Yorker*)
Pharmacology Society Council—9:00 A.M.; 1:00 P.M. (*Room 111, Hotel Statler*)
Pathology Society Council—9:00 A.M.; 1:00 P.M. (*Room 129, Hotel Statler*)
Nutrition Society Council—9:00 A.M.; 1:00 P.M. (*Parlor B, Hotel New Yorker*)
Immunology Society Council—9:00 A.M.; 1:00 P.M. (*Parlor C, Hotel New Yorker*)
Society for Experimental Biology and Medicine: Membership and Other Committees—10:00 A.M.; 1:30 P.M. (*Parlor E-H, Hotel New Yorker*)
Pharmacological Reviews Editorial Board—9:30 A.M. (*Room 127, Hotel Statler*)

Luncheons

Society for Experimental Biology and Medicine, Editorial Board—12:30 P.M. (*Hotel New Yorker*)

Monday, April 14

Meetings

Federation Executive Committee—3:00 P.M. (*Room 127, Hotel Statler*)
Physiology Society Council—9:00 A.M.; 1:00 P.M. (*Room 112, Hotel Statler*)
Biochemistry Society Council—9:00 A.M.; 1:00 P.M.; 7:30 P.M. (*Parlor A, Hotel New Yorker*)
Pharmacology Society Council—9:00 A.M.; 1:00 P.M. (*Room 111, Hotel Statler*)
Pathology Society Council—9:00 A.M.; 1:00 P.M. (*Room 129, Hotel Statler*)
Nutrition Society Council—9:00 A.M. (*Parlor B, Hotel New Yorker*)
Immunology Society Council—9:00 A.M. (*Parlor C, Hotel New Yorker*)
Society for Experimental Biology and Medicine: Council; Secretaries Committee—9:30 A.M.; 3:00 P.M. (*Parlor E-H, Hotel New Yorker*)
Pharmacological Reviews Editorial Board—9:00 A.M. (*Room 127, Hotel Statler*)
Nutrition Reviews Editorial Staff—4:00 P.M. (*Parlor D, Hotel New Yorker*)
Poultry Nutrition Conference—2:00 P.M.; 7:30 P.M. (*North Ballroom, Hotel New Yorker*)
Annual Reviews of Physiology Editorial Committee—2:00 P.M. (*Conference Room 3, Hotel Statler*)
Subcommittee on Radiobiology—7:30 P.M. (*Conference Room 3, Hotel Statler*)

Luncheons

Journal of Nutrition Editorial Board—12:15 P.M. (*Hotel New Yorker*)

Dinners

Nutrition Reviews Editorial Staff—6:30 P.M. (*Hotel New Yorker*)
*Circulation Section, Physiology Society—6:30 P.M. (*Hotel Governor Clinton*)
*Pain and Analgesics, Discussion Group—6:00 P.M. (*Sloan-Kettering Institute*)
University of Wisconsin—6:30 P.M. (*Fifth Avenue Hotel*)
*Comparative Physiology—6:30 P.M. (*Hotel New Yorker*)

Tuesday, April 15

Meetings

Biochemistry Society Council—1:00 P.M. (*Parlor A, Hotel New Yorker*)
Pharmacology Society Council—9:00 A.M. (*Room 111, Hotel Statler*)
Radiation Research Society—7:30 P.M. (*Penn Top North-Center, Hotel Statler*)

Luncheons

University of Illinois—12:15 P.M. (*Hotel New Yorker*)

Dinners

Physiology Society Editorial Boards—6:15 P.M. (*Hotel Statler*)
University of Michigan, Department of Biological Chemistry—6:00 P.M. (*Hotel McAlpin*)

---

*Attendance by invitation.

Wednesday, April 16

Meetings

Physiological Society Council—9:00 A.M. (*Room 112, Hotel Statler*)
Biochemistry Society Council—1:00 P.M. (*Parlor A, Hotel New Yorker*)
Pathology Society Council—9:00 A.M. (*Room 129, Hotel Statler*)
Nutrition Society Council—9:00 A.M. (*Parlor B, Hotel New Yorker*)
Immunology Society Council—9:00 A.M. (*Parlor C, Hotel New Yorker*)

Breakfasts

State University of Iowa—8:00 A.M. (*Schraffts Restaurant, 393 Seventh Avenue*)

Luncheons

Biological Abstracts: Section Editors— 12:30 P.M. (*Hotel Statler*)

Dinners

Pharmacology Society—7:00 P.M. (*Hotel Statler*)
Pathology Society—7:00 P.M. (*Hotel Statler*)
Nutrition Society—6:00 P.M. (*Hotel New Yorker*)
Journal of Biological Chemistry: Editorial Committee and Board of Editors—5:00 P.M. (*Hotel New Yorker*)
*Adrenal Physiology—8:00 P.M. (*Hotel Statler*)
*Respiration Section, Physiology Society—7:00 P.M. (*Hotel McAlpin*)

*Attendance by invitation.

Thursday, April 17

Meetings

Federation Executive Committee—9:00 P.M. (*Room 127, Hotel Statler*)
Physiology Society Council—7:00 P.M. (*Room 112, Hotel Statler*)
Pharmacology Society Council—1:00 P.M. (*Room 111, Hotel Statler*)
Pathology Society Council—7:00 P.M. (*Room 129, Hotel Statler*)
Nutrition Society Council—7:00 P.M. (*Parlor B, Hotel New Yorker*)

Luncheons

Former Nutrition Officers—12:30 P.M. (*Hotel Statler*)

Dinners

*Gastro-intestinal Section, Physiology Society—6:00 P.M. (*Hotel Statler*)
*Temperature Regulation Section, Physiology Society—6:00 P.M. (*Cornell University Medical College*)
*Metabolism Discussion Group—6:30 P.M. (*Hotel McAlpin*)
*Coagulation Section, Physiology Society—6:30 P.M. (*Hotel Statler*)

Friday, April 18

Meetings

Physiological Reviews Editorial Conference—9:30 A.M. (*Room 112, Hotel Statler*)

*Attendance by invitation.

AUTHOR INDEX

Bold face figures refer to serial number of paper in the program, FEDERATION PROCEEDINGS, Part II; other figures refer to page number of abstract, FEDERATION PROCEEDINGS, Part I. **S** refers to symposia; **P** refers to panels. **MP** refers to motion pictures, page 492. **JS** refers to Joint Session, page 492.

Abeles, R., 276; **764**
Abood, L. G., 3, 151; **310, 378**
Abraham, Jean, 439; **1491**
Abramson, S., 475; **1653**
Abreu, B. E., 20, 317, 385; **1155, 1156 1157, MP**
Ackermann, W. W., 461; **1598**
Adams, E., 179, 201; **1065, 1066**
Adams, J. P., Jr., 366; **1314**
Adams, M. A., 411; **1460**
Adams, W. E., 121; **597**
Adelberg, E. A., 179; **972**
Adolph, E. F., **276P**
Affeldt, J. E., 172; **414**
Agress, C. M., 3; **544**
Ahlquist, R. P., 317, 326, 395, 396; **1205, 1315, 1317, 1346**
Alanis, J., 6; **546**
Albanese, A. A., 179, 180; **742, 1077**
Albert, S., 236; **990**
Alexander, B., 180; **421**
Alexander, H. D., 441; **1511**
Alexander, Hattie E., 315; **910**
Alexander, R. S., 3; **154, 274P, 275P**
Alexander, W. F., 127; **42**
Alexander, W. M., 317; **1157**
Alfin-Slater, Roslyn B., 180; **878**
Allen, F. M., 4; **261**
Allen, F. W., 185; **1078**
Allen, G. W., **279P**
Allen, S. C., 4; **545**
Allen, T. H., 4, 128; **15; 18**
Allison, J. B., 307, 435; **736, 1571**
Allmark, M. G., 350, 367, 371; **1129, 1333, 1385**
Alper, C., 180; **714**
Altamirano-Orrego, M., 4; **256**
Altman, K. I., 4, 280; **781, 785**
Alvord, E. C., Jr., 5; **512**
Amassian, V. E., 5, 119; **232, 439**
Ambrus, Clara M., 318; **1339**
Ambrus, J. L., 318; **1339**
Ames, S. R., 181; **728**
Amundsen, L. H., 229; **948**
Andersen, J. T., 181; **873**
Anderson, C. E., 198; **1059**
Anderson, H. H., 378; **1389**
Anderson, H. L., 343; **1289**
Anderson, H. M., 177; **303**
Anderson, J. S., 106; **432**
Anderson, R. C., 332; **1372**
Andres, R., 177; **303**
Andresen, R. H., 407; **1428**
Andrews, G. A., 46; **488**
Andrews, J. C., 187; **1079**
Anfinsen, C. B., Jr., 18, 292; **876, 985**
Angel, Charles, 435; **1570**
Annegers, J. H., 168; **32**
Antonchak, Nancy, 53; **385**
Appel, S. B., 318; **1264**
Arai, K., 261; **1011**
Arasimavicius, A., 407; **1450**
Archer, J. D., 318, 332; **1308, 1337**
Armen, Dorothy M., 467; **1640**
Armstrong, G. G., 61; **571**
Armstrong, W. D., 181; **812**
Arnold, A., 358; **1280**
Arnold, J. S., 5; **61**
Aronsohn, R. B., 173, 402, 433; **622, 1398, 1490**
Arora, R. B., 318; **1249**
Artom, Camillo, 199, 261; **645, 1097**
Asadi, A. A., 362, 380; **1360, 1361**
Asenjo, C. F., 435; **1540**
Ashley, C. A., 407; **1450**
Ashmore, J., 182; **770**
Astrachan, L., 182; **1045**
Astwood, E. B., 126; **108**
Athens, J. W., 141; **371**
Auerbach, M. E., 319; **1330**
Austin, J. H., 153; **301**
Aven, M., 319; **1326**
Aviado, D. M., Jr., 6; **546**
Awapara, J., 487; **826**
Axelrod, B., 182; **804**
Axelrod, D. R., 123; **190**
Axelrod, J., 300, 319, 326; **928, 1287, 1288**
Axelrod, L. R., 182; **937**
Ayer, J. P., 407; **1451**
Ayers, Janet, 240; **1090**

Bach, L. M. N., 6; **447**
Bachem, A., 6, 7; **506, 547**
Bachhawat, B. K., 219; **854**
Back, A., 320; **1365**
Bacos, J. M., 481; **1654**
Baeder, D. H., 389; **1265**
Baernstein, H. D., 183; **916**
Baez, S., 7, 147, 177; **12, 19, 22**
Bailey, E. M., 386; **1343**
Bair, W., 182; **827**
Bajandas, F. J., 81; **579**
Baker, Alice S., 7; **289**
Baker, E. E., 468; **1611**
Baker, P. J., Jr., 488; **1108**
Baker, S. J., 164; **163**
Bale, W. F., 260; **984**
Balis, M. E., 183, 207; **1041, 1042**
Ball, C. O. T., 106; **432**
Balla, G. A., 100; **533**
Ballin, J. C., 184; **976**
Balls, A. K., 236; **1067**
Balourdas, T., 8, 334; **324, 1310**
Bandurski, R. S., 181; **804**
Bang, F. B., 33, 408; **308, 1439**
Banovitz, J., 250, 461; **635, 1607**
Barash, I. M., 320; **1166**
Barber, Aeleta, 408; **1452**
Barger, A. C., 8; **297**
Barker, E. S., 149; **121**
Barker, H. G., 42; **145**
Barker, S. B., 96; **125**
Barlow, C. M., 8; **214**
Barlow, J. C. D., 9; **357**
Barnard, G. L., 44; **563**
Barnard, J., 176; **438**
Barnes, Marie T., 305; **816**
Barnes, T. C., 320; **1148**
Barnett, R. C., 19; **462**
Barnum, C. P., 266; **753**
Barrett, Martha J., 162; **191**
Barrett, W., 320, 387; **1131, 1224**
Barrows, C. H., 436; **1524**
Barrows, L., 446; **1510**
Barry, Marie G., 444; **1523**
Bartell, P., 470; **1642**
Bartlett, Jane, 409; **1458**
Bartlett, P. D., 184; **987**
Bashe, W. J., Jr., 461; **1600**
Bass, A. D., 338; **1294**
Bass, J. A., 462; **1669**
Batchelden, Esther, 457; **1544**
Bates, Jacqueline C., 219; **887**
Bates, Margaret W., 436, 450; **1567, 1568**
Battersby, W. S., 161; **442**
Bauer, R. O., 321, 377, 381; **1128, 1173, 1247**
Baukol, J. L., 355; **1256**
Baumann, C. A., 261; **638**
Baumann, E. J., 184; **810**
Baumberger, J. P., 9; **490**
Bayer, A. C., 321; **1255**
Bayliss, Margaret J., 135; **518**
Beach, E. F., 200; **833**
Bean, J. W., 9, 43; **111, 562**
Beatty, Clarissa H., 9; **449**
Beaudoin, Rachel, 436, 457; **1546, 1569**
Beaumont, J., 206, 428; **721, 1430, 1489**
Bechtel, A. A., 10; **476, 548**
Beck, L. V., 95; **13**
Beck, Marjorie, 390; **1251**
Beck, W. S., 184; **694**
Becker, R. A., 185; **1078**
Beckfield, W. J., 348; **1266**
Beecher, H. K., 321, 326, 328; **1113S, 1180, 1214, 1215**
Beem, J. R., 10; **302**
Beers, R. F., Jr., 11; **460**
Beerstecher, E., Jr., 185; **667**
Begany, A. J., 342; **1322**
Beher, W. T., 185; **1028**
Behnke, A. R., 11; **344**
Behrmann, Vivian G., 11; **146**
Beiler, J. M., 253; **875**
Beinert, H., 186; **222; 993, 996**
Bell, C. C., Jr., 462; **1630**
Bell, F. K., 331; **1290**
Belman, S., 467; **1657**
Bender, C. W., 322; **1233**
Bender, M. B., 161; **442**
Benditt, E. P., 415; **1465**
Benenson, A. S., 473; **1614**
Benesch, Ruth E., 186; **1221**

Bennett, B. L., 480; **1595**
Bennett, Barbara A., 456; **1499**
Bennett, D. R., 354; **1163**
Benson, W. M., 312; **1176**
Bentley, O. G., 233; **663**
Berg, C. P., 195; **741**
Berg, L. R., 450; **1543**
Berg, P., 186; **655**
Bergeim, O., 236; **737**
Bergen, J. R., 12; **521**
Berger, Betty L., 369; **1181**
Berger, F. M., 322; **1176a**
Berglund, E., 12, 137; **151, 152**
Berke, H., 133; **458**
Berkut, M. K., 187; **1079**
Berliner, R. W., 81; **123, 269S**
Berne, R. M., 12; **74**
Bernfeld, P., 187; **682**
Bernstein, I. A., 187; **695**
Bertcher, E. L., 396; **1120**
Bessman, S. P., 187; **1019**
Best, C. H., 274; **874**
Best, W. R., 156, 188; **341, 733**
Betheil, J. J., 139; **48**
Bethell, F. H., 270, 296; **892, 1003**
Beutner, R., 323; **1176, 1367**
Beyer, K. H., 13, 401; **117, 1194**
Beyler, A. L., 13; **549**
Bhatt, P. N., 468; **1620**
Bidder, T. G., 323; **1295**
Bielinski, T. C., 430; **1422**
Bier, M., 205; **1071**
Biester, Alice, 457; **1544**
Binder, M. J., 3; **544**
Bing, R. J., 158; **397**
Bink, N., 149; **612**
Binkley, F., 188; **1069**
Birchard, J. R., 101; **67**
Bird, H. R., 440, 448; **1496, 1507**
Birmingham, M. K., 13; **520**
Bischoff, F., 188, 189; **774, 1080**
Bjurstedt, H., 87; **359**
Black, A. L., 437; **1495**
Black, E. C., 14; **246**
Black, S., 189; **995**
Blackburn, D. L., 90; **362**
Blackford, Margaret E., 118; **203**
Blackmore, W., 323; **1192**
Blair, Murray, 332; **1353**
Blake, W. D., 14; **193**
Blankenship, J. F., 97; **587**
Blaser, G., 355; **1256**
Blatherwick, N. R., 200; **833**
Blatt, M., 365; **1296**
Blaylock, L. G., 437; **1538**
Bliss, C. I., **1114S**
Bloch, A. L., 139; **48**
Bloch, K., 315; **687**
Block, M. A., 167, 212; **53, 828**
Blohm, T. R., 324; **722**
Bloom, W. L., 14; **455**
Bluemle, L., Jr., 35; **107**
Blum, J. J., 14; **329**
Blumberg, A., 92; **268**
Blumenthal, A., 348, 389; **1265, 1266**
Blumenthal, H. T., 433; **1479**
Bobb, J. R. R., 15; **296**
Boche, R. D., 135; **130**
Bockstahler, E. R., 385; **1155**
Bodian, D., 33, 462; **308, 1588**
Bodine, J. H., 15; **527**
Boehne, J. W., 355; **1147**
Boettiger, E. G., 102; **252**
Bogdanski, D. F., 324; **1368**
Bogdonoff, M. D., 15; **340**
Bollinger, F. W., 416; **1401**
Bollman, J. L., 212, 408; **828, 1403**
Bommarito, C. L., 30; **348**
Bomze, E. J., 415; **1475**
Bond, E. E., **1191**
Bond, V. P., 26, 158, 408; **200; 202, 1456**
Boniface, Joan, 207; **1031**
Boniface, K. J., 324; **1164**
Bonnycastle, D. D., 376; **1309**
Booker, W. M., 15, 398; **356, 1213**
Boothby, W. M., 98; **539**
Borchers, R., 446; **1517**
Borek, E., 189; **965**
Borison, H. L., 325; **1244**
Borun, E. R., 171; **192**
Botelho, Stella Y., 113; **478**
Bothwell, J. W., 190; **739**
Bourke, A. R., 325; **1136**
Bowen, W. J., 16; **331**
Bowie, Ethel C., 219; **887**
Bowman, D. E., 99; **589**
Boyd, L. J., 54; **291**
Boyd, M. J., 277; **1103**
Boyd, W. C., 462; **1667**
Boyer, P. D., 297; **1006**
Boyle, E., Jr., 18; **876**
Brackett, F. S., 115; **797**
Bradford, Sarah, 321; **1255**
Bradley, S. E., 113; **52**
Bradshaw, Phoebe J., 200; **833**
Brady, R. O., 190; **1057**
Braganca, B. M., 190, 272; **717, 1012**
Brandfonbrener, M., 144; **114**
Brandt, Noreen G., 462; **1669**
Branscomb, B. V., 16; **472**
Braude, A., 409; **1458**
Brauer, R. W., 325, 368; **69, 1298**
Braun, H. A., 325, 371, 372; **1199, 1355**
Braunwald, E., **279P**
Brecher, G., 408, 411; **1411, 1456**
Brecher, G. A., 16; **220**
Breed, E., 142; **609**
Brendel, W. B., 114; **355**
Brewster, W. R., 326, 328; **1214, 1215**
Brigham, Elizabeth H., 24; **553**
Briller, S. A., 114; **355**
Brin, M., 190; **977**
Briney, R. E., 394; **1117**
Brinkhous, K. M., 409, 420; **1412, 1485**
Briody, B. A., 463; **1615**
Britton, J. B., 326; **1317**
Britton, Maxine, 454; **1545**
Brockman, J. A., Jr., 267; **661**
Brodie, A. F., 191; **962**
Brodie, B. B., 300, 319, 326, 329, 369; **928, 1181, 1287, 1288**
Brodie, June W., 276; **674**
Brodovsky, E., 448; **1492**
Brodsky, W. A., 327; **1226**
Brody, D. A., 17, 125; **26, 89**
Brody, Samuel, **JS**
Broquist, H. P., 191; **840**
Brown, A. L., Jr., 17; **39**
Brown, E., 17; **222**
Brown, E. B., Jr., 18; **409**
Brown, E. S., 18; **543**
Brown, G. C., 463; **1590**
Brown, H., 191; **788**
Brown, J. M., 324; **1164**
Brown, P. K., 304; **706**
Brown, R. G., 318, 327, 332; **1308, 1335, 1337**
Brown, R. K., 18; **876**
Brown, R. R., 191; **1081**
Brown, R. V., 327; **1358**
Brown, T. G., Jr., 371; **1281**
Brown, W. C., 327; **1115**
Brozek, J., 18, 159; **304, 345, 1528S**
Brucer, M., 46; **488**
Brues, A. M., 155; **136S, 201**
Bruesch, S. R., 65; **36**
Bruner, H. D., 328; **1363**
Brunish, R., 251; **986**
Brust, M., 19; **462**
Bryant, S. H., 19; **313**
Buchanan, D. L., 19, 111, 157; **63, 64, 129**
Buchanan, G. A., 394; **1117**
Buchanan, J. M., 311; **794S, 1034**
Buchert, A. R., 307; **1074**
Buchwald, N. A., 20; **437**
Budy, Ann M., 135; **130**
Budzilovich, Tatiana, 430; **1422**
Bueding, E., 192; **946**
Buell, Mary V., 192; **744**
Bulle, P. H., 6, 47; **72, 546**
Bunde, C. A., 20; **MP**
Bunim, J. J., 405; **1270**
Bunker, J. P., 326, 328; **1214, 1215**
Burbridge, T. N., 328; **1331**
Burch, G. R., 317, 20; **1156, MP**
Burch, Helen B., 192; **1043**
Burchell, H. B., 163; **158**
Burgess, L. E., 20; **526**
Burk, D., 193; **796**
Burk, D. H., 425; **1462**
Burke, A. W., Jr., 328; **1262**
Burleigh, S., 47; **505**
Burlington, H., 20, 137; **188, 550**
Burnett, D. A., 394; **1117**
Burnett, J. M., 414; **1427**
Burnett, L., 422; **1410**
Burnett, W. T., Jr., 328; **1262**
Burns, H. L., 22; **351**
Burns, J. J., 329, 369; **1181**
Burns, K. H., 243; **808**
Burns, Louise, 260; **1007**
Burr, H. S., 21; **408**
Burrill, Lida, 457; **1544**
Burris, R. H., 305; **1033**
Burton, A. C., 21; **218**
Burton, R. M., 193; **998**
Butler, R., 176; **438**
Buyske, D. A., 186, **993**
Byerrum, R. U., 193; **806**
Byers, S. O., 51, 132; **567, 607**

Cahen, R. L., 329, 398; **1254, 1260**
Calesnick, B., 329; **1324**
Calhoun, W. W., 487; **11**
Calkins, D. G., 269; **844**
Callison, Elizabeth C., 437; **1573**
Calvin, L. D., 330, 403; **1132, 1370**
Camble, Perihan, 409; **1457**
Cameron, Anne, 349; **1243**
Campbell, B., 20, 21; **437, 551**
Campbell, Edith, 70; **444**
Campbell, J. A., 451; **1551**
Canellakis, E. S., 194; **654**
Cannan, R. K., 194; **627**
Cantarow, A., 22, 118; **112, 552**
Cantoni, G. L., 330, 399; **653, 836**
Cantrell, W. F., 90; **362**
Canzanelli, A., 144; **259**
Caplan, I. T., 432; **1445**
Capps, J. N., 123; **190**
Capps, R. T., 331, 335; **1217, 1259**

Cargill, W. H., 22; 116
Carino, M. D., 194; 1015
Carlquist, J. H., 475; 1660
Carlson, L. D., 22; 351
Carlson, W., 159; 304
Carmichael, E. B., 218, 1085
Carmichael, Elizabeth J., 371; 1129
Carnes, W. H., 410; 1447
Carpenter, J. B., 50; 94
Carpenter, Mary P., 22; 532
Carr, C. J., 331, 359, 371; 1218, 1290, 1300
Carroll, R. T., 72; 415
Carson, S. F., 194; 912
Carter, C. E., 195; 755
Carter, J. R., 410; 1409
Carter, R. L., 402; 1397, MP
Cartwright, G. E., 438, 445; 1561, 1562
Carver, M. J., 306; 863
Casden, D. D., 85, 325
Caster, W. O., 195; 981
Catchpole, H. R., 23; 181
Cavert, H. M., 23, 79; 83, 492
Cazort, R. J., 331; 1371
Celander, D. R., 195; 741
Century, B., 331; 1344
Cerecedo, L. R., 250, 273, 450, 457; 676, 1101, 1513, 1554
Cerletti, A., 6; 546
Chaloupka, M., 448; 1492
Chambers, R., 8; 324
Chambers, W. W., 23; 226
Chance, B., 196; 957
Chang, M. C., 24; 102
Change, H. Y., 413; 1441
Changus, G. W., 410; 1440
Chao, P. C., 437; 1575
Charalampous, F., 196; 670
Chargaff, E., 315; 910
Chase, A. M., 24; 465, 553
Chase, H. F., 388; 1276
Chase, M. S., 438, 445; 1561, 1562
Chase, M. W., 485; 1633
Chatterjea, J. B., 154; 292
Chauncey, H. H., 196; 867
Chavos, Stella, 390; 901
Cheldelin, V. H., 305, 454; 825, 1541
Chen, C., 197; 768
Chen, K. K., 332; 1372
Chenoweth, M. B., 354; 1163
Cherkes, Amelia, 291; 639
Cherry, Ruth, 94; 436
Child, G. P., 332; 1332
Chinard, F. P., 197; 186
Chinn, H. I., 400, 487; 11, 1153
Chodos, R. B., 411; 1460
Choucroun, N., 464; 1652
Chow, B. F., 88, 249, 436, 441, 446, 466; 669, 845, 846, 1509, 1510, 1524
Christensen, B. E., 305; 825
Christensen, G. M., 188; 1069
Christensen, H. N., 275; 677
Christenson, G. M., 475; 1660
Christiansen, G. S., 24; 528
Christoff, N., 121; 597
Churg, J., 368; 1137
Claff, C. L., 141; 461
Clamann, H. G., 25; 540
Clark, B. B., 320, 332, 376, 393; 1127, 1140, 1166, 1353
Clark, C. T., 300; 928
Clark, G., 78; 504
Clark, J. K., 149; 121
Clark, Marguerite, 111; 247
Clark, Mary C., 355; 1122
Clark, P. F., 444; 1516
Clark, R. T., Jr., 25; 496
Clark, W. C., 154; 24
Clark, W. G., 3, 346; 544, 1126
Clarke, D. A., 225; 1040
Claycomb, C. K., 301; 1062
Clayton, Ruth, 438, 439; 1522, 1525
Clemente, C. D., 143; 225
Clements, R., 332; 1337
Clemmer, J. J., 337; 659
Cliffton, E. E., 84; 294
Clouet, Doris H., 197; 640
Coates, C. W., 4; 256
Cochran, K. W., 333, 341; 1292, 1293
Cohen, L., 434; 1432
Cohen, L. A., 25; 166
Cohen, M. R., 61; 174
Cohen, P. P., 222; 926
Cohen, S. S., 284; 850
Cohen, Sidney, 463; 715
Cohen, Stanley, 197; 650
Cohan, Marjorie S., 299; 802
Cohn, J. E., 26; 475
Cohn, W. E., 303; 906
Colcher, H., 26, 78; 95, 96
Coldwater, K. E., 127; 42
Cole, L. J., 26; 200
Cole, Versa, V., 333; 1123
Colehour, J. K., 204; 786
Coleman, R. J., 198; 1055
Collings, W. D., 174; 210
Collins, R. A., 438; 1531
Collins-Williams, C., 479; 1658
Collison, H. A., 285; 807
Colowick, S. P., 238, 1047
Coloviras, G. J., Jr., 412; 1482
Comroe, J. H., Jr., 113; 280P, 478
Comstock, C. C., 374; 1174
Condliffe, P. G., 198; 1022
Cone, G., 206, 427, 427; 721, 1430, 1488, 1489
Coniglio, J. G., 198; 1059
Conley, C. L., 66; 484
Conn, E. E., 211; 856
Conn, Lillian W., 73; 148
Conner, R. L., 302; 945
Consolazio, C. F., 51, 423; 140, 1453
Conzelman, G. M., Jr., 199; 675
Cook, D. L., 333; 1373
Cook, M. H., 215; 1084
Cook, Margaret, 199; 698
Cooley, Mary J., 75; 211
Cooley, Shirley L., 314; 818
Coombs, Alayne, 70; 444
Coombs, H. E., 68, 349; 235, 1243
Coon, J. M., 331, 342, 386, 403; 1134, 1235, 1313, 1344
Coon, M. J., 248; 656
Cooper, J. A. D., 27; 319
Cooperstein, S. J., 304; 961
Copeland, W. W., 404; 1116
Copenhaver, J. H., 334, 349; 1197, 1271
Copley, A. L., 27; 129, 554
Coppedge, R., 429; 1444
Copperman, R., 27; 493
Corbin, E. A., 87; 78
Corcoran, A. C., 102; 384
Corey, E. L., 28; 555
Corley, R. C., 285; 1054, 1106
Cornfield, J., 193; 796
Cornish, E. R., 138; 410
Corson, Elizabeth O., 28; 47
Corson, S. A., 28; 47
Cotlove, E., 28; 499
Cotton, M., DeV., 334; 1165
Cotzias, G. C., 334; 1310
Couch, J. R., 438, 440; 1504, 1508
Coulombre, Jane, 256; 689
Coulson, C. K., 25; 496
Coulter, M. P., 416; 1467
Coulter, N. A., Jr., 65; 507
Cox, J. W., 127; 42
Cox, W. M., Jr., 43 , 441; 1509, 1521
Coy, F. E., Jr., 81; 579
Craig, W. McK., 133; 37
Crampton, C. F., 464; 1639
Crandall, G., 176; 438
Crane, C., 288; 944
Crane, K. F., 273; 933
Crane, R. K., 199; 751
Cravioto-M, Joaquin, 304; 665
Crawford, Betty, 29; 266
Crescitelli, F., 29; 315
Crider, J. O., 29; 31
Crisouolo, D., 25; 496
Crocker, T. T., 464; 1599
Croft, C. C., 476; 1664
Cronheim, G., 334; 1186
Cronkite, E. P., 411; 1411
Crosley, A. P., Jr., 149; 121
Cross, Valmore, 454; 1553
Crowder, J. N., 151; 430
Crowder, Marietta, 199; 645
Crump, M., 332; 1332
Crump, S. L., 1112S
Crumpton, C. W., 62, 335; 9, 1259
Crystal, D., 134; 305
Cullen, S. C., 382; 1219
Cullimore, O. S., 200, 833
Cunningham, L. W., Jr., 265; 1072
Cunningham, R. W., 355; 1122
Curb, D L., 423; 1414
Curtin, L. V., 439; 1491
Custer, J. H., 316; 720

Da Costa, Esther, 438, 439; 1522, 1525
Da Costa, Frances D., 15; 356
Daft, F. S., 200, 450; 668, 1082, 1503
Dahl, L. K., 411; 1399
Dailey, R. E., 151; 430
D'Amato, H., 29; 21
Damgaard, E., 165; 390
Dandliker, W., 155; 254
Danes, Betty, 24; 528
D'Angelo, S. A., 30; 243
Danhof, I. E., 154; 24
Daniel, E. E., 335, 362, 380; 1360, 1361
Daniels, F., Jr., 30; 348
Daniels, W. F., 480; 1580
Dannenberg, A. M., Jr., 475; 1653
Darby, W. J., 453; 1532
Dattoli, J. A., 324; 1368
Daum, Kate, 164; 342
Davenport, F. M., 465; 1602
Davenport, H. W., 272S
Daves, M. L., 279P
David, N. A., 335, 1374
Davidow, B., 336, 383; 1144, 1145
Davidsohn, I., 465; 1641
Davidson, H. M., 258; 958
Davies, D. F., 10; 302
Davies, P. W., 30; 377
Davin, J., 385; 1211
Davis, A. K., 116; 491
Davis, B. D., 465, 485; 930, 970
Davis, D., 86; 347

Davis, D. L., 120, 213, 319, 336; **45, 1326, 1327, 1328, 1330**
Davis, H., 30; **502**
Davis, H. A., 412; **1482**
Davis, J. E., 337; **1375**
Davis, J. O., 336; **55**
Davis, N. C., 201; **1066**
Davis, R. L., 466; **845**
Davisson, E. O., 219; **854**
Dawe, C. J., 412; **1483**
De Angeli, Elizabeth, 237; **1021**
Dearborn, E. H., 337; **1228**
DeArmond, R., 309; **1466**
de Beer, E. J., 403; **1279**
de Bodo, R. C., 31, 39; **318, 323, 556**
DeBoer, B., 32, 361; **557, 1183**
DeBoer, D., 337; **1376**
de Candole, C. A., 330; **1149**
DeFeo, V. J., 32; **104**
de Graffenried, T. P., II, 81; **579**
Deichmann, W. B., 337; **659**
de la Haba, D. S., 69; **241**
De La Haba, G., 201; **697**
de la Huerga, J., 393, 412, 419, 431; **1303, 1469, 1470, 1477**
Delgado, J. M. R., 32; **440**
Deliwala, C. V., 364; **1248**
Della-Monica, E. S., 316; **720**
del Pozo, E. C., 32, 33; **386, 558**
DeLuca, H. A., 201, 277; **991, 1017**
Delwiche, C. C., 201, 437; **800, 1575**
Delwiche, E. A., 194; **912**
De Meio, R. H., 202; **1013**
Dempsher, J., 33; **308**
Deneau, G. A., 338; **1188**
Denny, F., 484; **1659**
Denton, C. A., 440, 448; **1496, 1507**
Deroin, J. A., 341; **1378**
Dervinis, A., 338; **1267**
Desbarats, Marie L., 13; **520**
Desmarais, A., 33; **322**
deSuto-Nagy, G. I., 413; **1435**
Dethier, V. G., 34; **509**
Detrick, L. E., 338; **1377**
Detweiler, D. K., 34; **87**
Deuel, H. J., Jr., 218; **727**
Deutsch, M. E., 202; **624**
DeWitt, Janet M., 160, 161; **452, 619**
Dexter, L., 74; **155**
Dickie, Margaret M., 450; **1567**
Dienst, R. B., 225; **658**
Diercks, F. H., 466; **1621**
Diermeier, H. F., 338; **1294**
Dietrich, E. V., 338; **848**
Dietrich, L. S., 202; **843**
Dietz, N., Jr., 135; **143**
Dill, D. B., 157; **413**
Dill, W. A., 55; **1338**
DiLuzio, N. R., 34; **65**
Dimant, E., 233; **761**
Dinning, J. S., 440; **1560**
Dion, H. W., 269; **844**
DiPalma, J. R., 34; **435**
Dische, Z., 202; **763**
DiStefano, H. S., 338; **1294**
DiStefano, V., 359; **1234**
Dixon, F. J., 466, 476; **1628, 1632**
Dju, Mei Yu, 449; **1558**
Dobriner, K., 217, 238; **771, 939**
Dobson, E. L., 35; **79**
Doctor, V. M., 438, 440; **1504, 1508**
Dodd, M. C., 462; **1668, 1669**
Dohan, C., 35; **107**
Doherty, D. G., 35; **258**
Doisy, E. A., 182; **770**
Doisy, E. A., Jr., 232; **934**
Dole, V. P., 142, 161, 334, 411; **43, 44 1310, 1399**
Dolin, M. I., 203; **851**
Domenjoz, R., 339; **1272**
Dominguez, A. M., 339; **1195**
Domino, E., 376; **1150**
Donaldson, D. M., 475; **1660**
Dontas, A. S., 36, 82; **77; 165**
Doppelt, F., 262; **486**
Dorchester, F. E. C., 36; **110**
Dorfman, A., 276; **764**
Dorfman, R. I., 228; **936**
Doudoroff, M., 212; **745**
Dougherty, T. F., 67; **317**
Doughty, D. D., 405; **1138**
Doull, J., 340; **133S**
Dounce, A. L., 203; **860**
Dow, P., 36, 74, 119; **366, 367, 368**
Dow, R. P., 483; **1585**
Dowling, Marian T., 442; **1515**
Downing, C., 337; **659**
Doyle, J. T., 37; **369**
Doyle, M. L., 203; **683**
Drabkin, D. L., 204; **786**
Draize, J. H., 340; **1170**
Drake, M. E., 467; **1619, 1650S**
Draper, H. H., 204
Dresel, P. E., 340; **1152**
Dreyfuss, M. L., 345; **1139**
Drury, D. R., 310; **830**
Drysdale, G. R., 204; **884**
Dubin, A., 231; **1023**
Dubnoff, J. W., 205; **841**
DuBois, A. B., 37; **477**
DuBois, K. P., 333, 340, 341; **133S, 1292, 1293, 1378**
Ducay, E. D., 209; **1052**
Ducoff, H. S., 37; **194**
Duff, I. F., 213, **1027**
Dugal, L.-P., 37, 38; **321, 559**
Duke, J. A., 205; **1071**
Dumm, Mary E., 38, 440; **109, 1514**
Duncan, G. M., 213, **868**
Duncan, Mary, 205; **1083**
Dunlap, C. E., 414; **1400**
Dunn, A., 396; **128**
Dunn, Clara E., 357; **1159**
Duran-Reynals, F., 463; **1615**
Dury, A., 38; **516**
Dye, J. A., 39; **101**
Dyme, H. C., 84; **339**

Eades, C. H., Jr., 205; **954**
Earle, D. P., 39; **318**
Easterday, O. D., 341, 342; **1305, 1379**
Easton, D. M., 39; **381**
Eastwood, D. W., 100; **533**
Ebaugh, F. G., Jr., 413; **1459**
Eberts, F. S., Jr., 206; **801**
Eckfeld, D. K., 342; **1322**
Eckstein, R. W., 40; **160**
Eddy, Nancy C., 40; **396**
Eddy, W. H., 206, 427, 428, 441; **721, 1430, 1488, 1489, 1557**
Edelberg, R., 40; **361**
Edelman, I. S., 40; **62**
Edelmann, A., 41; **260**
Ederstrom, H. E., 32, 41; **40, 557**
Edgerton, W. H., 55; **1338**
Edmonds, Eleanor J., 185; **667**
Edmondson, H. A., 254; **871**
Edsall, J. T., 224; **633**
Edwards, C., 41; **309**
Edwards, C. H., 441; **1493**
Ehrich, W. E., 338; **1267**
Eichel, B., 304; **961**
Eichelberger, Lillian, 259; **815**
Eichwald, E. J., 413; **1441**
Eiler, J. J., 246; **897**
Eilert, M. L., 434; **1432**
Einheber, A., 42; **560**
Eisemann, G., 133; **311**
Eisen, H. N., 467; **1657**
Eisenman, Anna J., 206, 346; **1124, 1185**
Eisenstein, A. B., 207; **1031**
Eitelman, E. S., 269; **704**
Elam, J. O., 100; **533**
Elder, J. D., Jr., 42; **145**
Elion, Gertrude B., 183, 207; **1041, 1042**
Elisberg, E. I., 42; **561**
Ellingson, R. C., 439, 441; **1509, 1521**
Ellinwood, L. E., 331, 342, 386, 403; **1134, 1235, 1313, 1344**
Elliott, A. M., 207; **918**
Elliott, H. W., 373; **1388**
Elliott, W. H., 207, 232; **685, 934**
Ellis, C. H., 42, 403; **1279, 1283**
Ellis, F. W., 342; **1351**
Ellis, Marie E., 26; **200**
Ellis, M. M., 106; **591**
Ellis, R., 134; **305**
Ellis, S., 343; **1289**
Elvehjem, C. A., 202, 438; **843, 1531**
Elwell, L., 32; **562**
Elwood, Mary J., 110; **629**
Elwyn, D., 208; **648**
Emerson, G. A., 318, 332, 377, 379; **1308, 1335, 1336, 1337**
Emerson, J. D., 43; **162**
Enders, J. F., 467, 483; **1591, 1592, 1647S**
Engbring, Virginia Kubacki, 246; **861**
Engel, L. L., 288; **778**
Engel, M. B., 23; **181**
Engel, R., 62; **573**
Engel, R. W., 441; **1511**
Englard, S., 208; **750**
Englehardt, J., 43; **298**
Entenman, C., 44, 156; **66, 68**
Epperson, D. P., 44; **1048**
Eppright, Ercel, 442, 443; **1548, 1550**
Erickson, C. C., 413; **1446**
Erickson, J. O., 467; **1640**
Ernst, P. J., 289; **1107**
Esposito, R. G., 208, 458; **732, 1505**
Essig, C. F., 44; **563**
Estandia, A., 65; **157**
Etheridge, E. M., 422; **1436**
Evans, E. A., Jr., 209; **966**
Evans, H. M., 45, 452; **103, 1536**
Evans, J. D., 45; **530**
Evans, L. B., 469; **1622**
Everett, G. M., 343; **1121**
Everitt, Martha, 468; **1620**
Eversole, W. J., 45; **515**
Evert, H. E., 209; **1053**
Ewing, P. L., 343; **1352**
Eya, M., 213; **1027**
Ezell, H. K., 348; **1160**

Fager, E. W., 209; **798**
Fairbanks, V. F., 325; **1244**
Faith, H. E., 317; **1157**
Farah, A., 343, 348, 350; **1125, 1127, 1189**
Farber, E., 414; **1400**
Farber, Miriam B.; **470, 1634**
Farber, S. J., 39; **318**

Farmer, C. J., 56; 569
Fassel, Mary J., 371; 1218
Faulconer, A., Jr., 344; 1216
Faulkner, P., 190; 717
Fay, J., 176; 438
Featherstone, R. M., 339, 341, 382; 848, 1219, 1305
Feeney, R. E., 209; 1052
Feickert, Jean, 387; 1224
Feigelson, Muriel, 417; 1438
Feigelson, P., 210; 1004
Feinstein, B., 127; 399
Feinstein, R. N., 184; 976
Feldman, D., 469; 418
Feldott, Gladys, 209; 891
Feller, D. D., 45; 338
Felsenfeld, G., 224; 633
Fenton, P. F., 442; 1515
Ferguson, F. C., 429; 1405
Ferguson, F. C., Jr., 344; 1366
Ferguson, J. H., 46, 93; 483, 488
Ferguson, T. B., 46, 145; 363, 364
Ferro, P. V., 248; 879
Fiala, S., 344, 420
Fiala, S., 210; 564
Filer, L. J., Jr., 449; 1558
Filley, G. F., 210; 469
Finch, C. A., 52; 288
Finch, S. C., 414; 1461
Finkel, A. J., 344; 1380
Finnegan, C., 396; 128
Finnegan, J. K., 345, 331; 1139, 1307
Firestein, R., 393; 1303
Fischer, H., 275; 677
Fischer, Marie A., 211; 664
Fischer, R. G., 483; 1585
Fisher, A. L., 339, 345; 848, 1297
Fisher, B., 211; 33
Fisher, H. F., 211; 856
Fisher, J. D., 429; 1454
Fisher, Jean, 264; 711
Fisher, M., 437; 1573
Fishler, M. C., 26; 200
Fishman, M., 146; 132
Fishman, W. H., 187; 682
Fitting, Charlotte, 212; 745
Fitzgerald, Patricia L., 315; 910
Fitzhugh, O. G., 325, 345, 347; 1134, 1136, 1236
Fitzmorris, A. O., 46, 97; 565, 587
Flaum, Patricia, 346; 1126
Fleisher, J. H., 212, 1014
Flock, Eunice V., 212; 828
Flokstra, J. H., 193; 806
Flores, A., 121; 597
Florey, E., 172; 253
Floyd, H. M., 469; 1670
Floyd, Joan, 484; 1659
Flynn, Ruth M., 189; 995
Foden, Ruth H., 46; 566
Fodor, P. J., 304; 1070
Foldes, F. F., 213, 319, 336; 1326, 1327, 1328, 1330
Follis, R. H., Jr., 414; 1427
Foltz, E. L., 47; 72
Fones, W. S., 310; 1501
Forbes, A., 47; 505
Forbes, J. C., 213; 868
Forbes, W. H., JS
Ford, R. V., 346; 1193
Foris, P., 213; 899
Formal, S. B., 468; 1611
Forster, R. E., II, 47, 48; 473, 535
Forsyth, K., 394; 1117
Fortier, G., 37; 559
Foster, Phyllis W., 213, 1027
Foster, R. K. H., 361, 363; 1182, 1183
Foster, W. C., 48; 240
Fowler, W. S., 47, 48; 473, 535
Fox, C. L., Jr., 48; 395
Fox, Hazel M., 442; 152
Fox, J. P., 468; 1620
Fox, S. W., 214; 824
Fraenkel, G., 443; 1542
Fraenkel-Conrat, H., 214; 630
Fraenkel-Conrat, Jane, 214; 630
Frajola, W. J., 214; 956
Fancher, J. A., Jr., 421; 1472
Francis, T., Jr., 1626S
Frank, C. W., 169; 219
Fraser, H. F., 206, 346, 402; 1124, 1185, MP
Frawley, J. P., 325, 347; 1136, 1236
Frederik, W. S., 49; 161
Free, A. H., 215; 1084
Free, Helen M., 215; 1084
Freedberg, A. S., 49; 59
Freeman, L. W., 99; 589
Freeman, Marian V., 347; 1142
Freeman, S., 56, 101; 244, 569
Freese, H. B., 330; 1370
Freinkel, N., 77, 141; 195, 371
Freidberg, C. K., 49; 209
Friedberg, F., 253; 1063
Friedberg, W., 50; 242
Friedell, H. L., 387; 198
Friedemann, T. E., 188; 733
Frieden, E., 215; 1005
Frieden, E. H., 50, 215; 180, 988
Friedkin, M., 216; 757
Friedland, C. K., 62; 9
Friedman, J., 415, 470; 1426, 1584
Friedman, M., 51, 132; 567, 607
Friedman, M. H. F., 50; 94
Friedman, N. B., 415; 1475
Friedman, S., 216; 968, 969
Friedmann, Bernice, 216; 647
French, C. E., 443; 1566
French, C. R., 28; 555
French, J. E., 415; 1465
Frenkel, J. K., 468; 1646
Fricke, H. H., 443; 1506
Frisell, Wilhelm R., 252; 649
Fritz, W. F., 46; 565
Froeb, H. F., 51; 140
Froix, C., 398; 1213
Frost, D. V., 443; 1506
Fruhman, G. J., 51; 568
Frumin, M. J., 51, 112; 215, 446
Fry, W. J., 109; 228
Frye, S. A., 71; 360
Fukushima, D. K., 217; 771
Fulton, G. P., 52; MP
Funckes, A. J., 306; 863
Fung, F. H., 217; 679
Fuortes, M. G. F., 5; 512
Furchgott, R. F., 217; 1347
Furshpan, E., 172; 253
Furth, F. W., 416; 1467
Furth, J., 430; 1408
Furutani, Y., 281; 637

Gabrio, B. W., 52; 288
Gaebler, O. H., 185; 1028
Galambos, R., 142; 443
Galdston, M., 53; 471
Gallagher, T. F., 217; 771
Galloway, R. E., 218; 1085
Ganguly, J., 218; 727
Gantt, W. H., 160; 428
Garb, S., 53; 426
Gardier, R. W., 347; 1229
Gardner, E. A., 348; 1125
Gasteiger, E. L., 53; 231
Gaudino, M., 29; 266
Gauer, O. H., 147; 407
Gaunt, R., 53; 385
Geiger, E., 444; 1502
Geiger, L. E., 444; 1502
Geiling, E. M. K., 380; 1158
Geisendorfer, M., 128; 604
Geisler, Doris, 150; 224
Gel, E. M., 217; 679
Geller, H. M., 144; 114
Gelman, Anna C., 456; 1530
Gemmill, C. L., 348; 955
Gerard, R. W., 3, 151; 310, 378
Gerarde, H. W., 218; 982
Gergely, J., 218, 999
Gerheim, E. B., 469; 1670
Gershberg, H., 54; 522
Gershenfeld, L. H., 110; 629
Gershoff, S. N., 444; 1516
Gesell, R., 36, 121; 165, 598
Gey, G. O., 55; 531
Geyer, R. P., 219; 837
Ghosh, B. N., 259; 326
Gibson, D. M., 219; 854
Gidez, L. I., 219, 421; 881, 1472
Giere, F. A., 45; 515
Giffee, J. W., Jr., 292; 1025
Gilson, A. S., Jr., 141; 170
Ginsburg, J., 54; 213
Gippin, M., 237; 821
Girling, F., 21; 218
Gittleman, I. F., 269; 729
Gjönnes, B., 140; 249
Glaid, A. J., 220; 716
Glass, G. B. J., 54; 291
Glassman, J. M., 342, 348; 1266, 1322
Glassman, M., 305; 816
Glazko, A. J., 55; 1338
Glinos, A. D., 55; 531
Glinos, Eleanor B., 229; 948
Gluck, J. L., 318; 1264
Gochenour, W. S., Jr., 469; 1622
Goettsch, Marianne, 444; 1572
Gofman, J. W., 137S
Gold, H., 352; 1114S, 1223
Goldberg, B., 410; 1447
Goldberg, L. I., 334, 348; 1160, 1165
Goldblatt, H., 224; 1030
Goldblum, N., 469; 1596
Goldensohn, E. S., 55; 172
Golder, R. H., 260; 704
Goldfeder, Anna, 56; 197
Goldman, A., 318; 1264
Goldman, D., 222; 996
Goldman, H., 85; 325
Goldman, M. A., 150; 372
Goldstein, F., 349; 1168
Goldstein, M. S., 56; 454
Goldstone, J. M., 153; 508
Goldwater, W. H., 220; 872
Goldzband, M. G., 78; 504
Gollan, F., 56; 354
Gollub, S., 469; 418
Goodale, W. T., 67; 10
Goodman, D. S., 224; 633
Goodman, Eleanore, D., 255; 743
Goodman, H., 144; 184
Goodman, L. S., 327, 394, 401, 404; 1115, 1116, 1117, 1118

Goodman, R. D., 43, 421; 298, 1418
Goodner, K., 470; 1642
Goodsell, J. S., 343; 1121
Gordon, A. S., 51, 123; 513, 568
Gordon, E. E., 56; 569
Gordon, M. W., 220; 672
Gordon, R. S., Jr., 247; 708
Cordon, W. G., 220; 710
Gorlin, R., 57, 93; 149, 150
Gosselin, R. E., 162; 147
Goth, A., 334, 349, 358; 1197, 1208, 1271
Gotlieb, T., 461; 1600
Gots, J. S., 191, 216; 962, 968
Gottlieb, J. S., 341; 1305
Gould, R. G., 252; 983
Gourevitch, A., 221; 880
Gourley, D. R. H., 57; 284
Gourzis, J., 349; 1243
Gowdey, C. W., 338; 1188
Goyco, J. A., 243; 1092
Grace, Elizabeth, 332; 1353
Grad, B., 135; 518
Graf, LiseLotta, 416; 1442
Graham, A. B., 470; 1584
Graham, G., 350; 1189
Graham, G. R., 57; 70
Graham, Helen Tredway, 350; 1207
Graham, R. C., 58; 179
Graham, W. D., 350, 367; 1333, 1385
Graig, F., 350
Gram, M. R., 448; 1492
Granick, S., 221; 782
Grant, G. A., 390; 1251
Grant, J. I., 351; 1316
Grant, R., 58; 485
Grant, Rhoda, 58; 99
Grapes, B. G., 119; 536
Graubarth, H. N., 327; 1226
Grauer, A., 253; 813
Gray, J. L., 221; 1261
Graybiel, A., 204; 786
Grayhack, J. T., 81; 176
Green, D. E., 186, 222; 993, 996
Green, D. M., 333, 351, 388, 394; 1302, 1319, 1373, 1392
Green, H. D., 82, 377, 386; 216, 1348, 1349
Green, H. I., 388; 1172
Green, I., 222; 900
Green, N. M., 265; 1072
Greenberg, D. M., 217, 229, 437; 679, 1087, 1575
Greenberg, J., 351; 1340
Greenberg, G. R., S793
Greenberg, R., 58; 73
Greenberg, R. M., 444; 1523
Greene, H. S. N., 416; 1443
Greene, Inez, 69; 50
Greene, R., 137; 7
Greenspon, S. A., 416; 1401
Greenwald, I., 445; 1576
Greep, R. O., 85; 382
Gregersen, M. I., 4, 128; 15, 18
Gregg, D. E., 46, 145; 363, 364
Gregoire, F., 210; 469
Gregory, A. J. D., 222; 992
Greiff, D., 432; 1481
Greig, Margaret E., 357; 1159
Greiner, T., 352; 1223
Grenell, R. G., 59; 375
Grevior, J. S., 396; 128
Griffin, D. R., 59; 255
Griffith, R. S., 59, 228; 6, 773
Griffitts, J. J., 248; 879
Grindlay, J. H., 212, 408; 828, 1403
Grisolia, S., 222; 926
Grodins, F. S., 80; 411
Gross, E. G., 382; 1219
Gross, J., 60; 464
Grossman, J., 60, 171; 192, 299
Grossman, M. I., 156, 431; 341, 1477
Grover, R. F., 55; 172
Groves, M. L., 223; 626
Gruber, C. M., Jr., 352, 368; 1252, 1274
Gruenstein, Margot, 156; 93
Gruhzit, C. C., 352; 1245
Grumbach, L., 60; 570
Grundfest, H., 4, 107; 256, 374
Guarino, A. J., 223; 748
Gubler, C. J., 438, 445; 1561, 1562
Guest, G. M., 213; 899
Guggenheim, K., 223; 1060
Guibert, A., 159; 262
Gullickson, G., 86; 35
Gully, R. J., 62; 573
Gunsalus, I. C., 203; 851
Gunther, B., 8; 297
Gurd, F. R. N., 224; 633
Gurin, S., 190; 1057
Guterman, H. S., 61; 174
Guth, P., 61; 29
Guthneck, Barbara T., 456; 1499
Gutman, A. B., 149; 49
Gutmann, H. R., 488; 680
Guyton, A. C., 61; 217, 571
Guzman, F. C., 33; 558
Guzman, M., 445; 1549
Gyorgy, P., 35; 107

Haag, H. B., 345, 353, 391; 1139, 1307, 1356
Haas, E., 224; 1030
Hackley, B. E., Jr., 224; 1051
Hafkenschiel, J. H., 62; 9
Hagan, E. C., 353; 1143
Hagerman, D. D. 225; 1086
Hahn, R. J., 62; 572
Haid, B., 1220
Haist, R. E., 36, 82; 110, 580
Halberg, F., 62; 573
Hale, H. B., 63; 404
Haley, T. J., 338, 353, 368; 199, 1263, 1377
Hall, B. V., 63; 196
Hall, C. E., 63; 3
Hall, F. G., 63; 358
Hall, Gladys D., 211; 664
Hall, O., 63; 3
Hall, V. E., 4; 545
Hall, W. K., 225; 658
Halpern, M., 49; 209
Ham, Claire, 288; 778
Hambourger, W. E., 354; 1318
Hamilton, L., 225; 1040
Hamilton, P. B., 225; 925
Hamilton, W. F., 74; 367
Hammon, W. B., 1649S
Hanbery, J., 64; 441
Handford, S. W., 100; 533
Handler, P., 228; 1010
Handley, C. A., 378, 1225
Handron, J., 134; 305
Handschumacher, R. E., 186; 993
Hanke, M. E., 242, 923
Hanna, C., 342, 354; 1130, 1379
Hansen, A. E., 445, 458; 1564, 1563
Hanzal, Dorothy L., 357; 1231
Harding, B., 379; 1299
Hardman, H., 354; 1163
Hardy, J. D., 64, 65; 115, 511, 574
Harkness, W. D., 354, 392, 404; 1146, 1169, 1269
Harman, J. W., 417; 1438
Harned, B. K., 355; 1122
Harper, E. O., 355; 1147
Harris, A. S., 65; 157
Harris, D. L., 136, 226; 529, 974
Harris, P. L., 181; 728
Harris, Susanna, 470; 1634
Harris, T. N., 470; 1634
Harrison, F., 65; 36
Harrison, R. W., 73; 300
Harrisson, J. W. E., 318; 1339
Hart, E. R., 164; 379
Harte, R. A., 446; 1510
Harting, Jane, 226; 1000
Hartline, H. K., 65; 507
Hartman, F. W., 11, 419; 146, 1413
Hartmann, R. C., 66; 484
Hartroft, W. S., 417; 1471
Harvey, S. C., 355; 1256
Hass, G. M., 407, 431; 1428, 1437, 1450, 1451
Hassid, W. Z., 226; 805
Hastings, A. B., 227; 829
Hastings, J. W., 66; 466
Hathaway, Milicent, 442, 449; 1548, 1550
Haugaard, N., 291; 702
Haurowitz, F., 227, 464; 632, 1639
Havens, W. P., Jr., 22; 552
Hawrylewicz, E. J. 292, 1025
Hawthorne, E. W., 66; 575
Hayaishi, O., 227, 395; 931, 1035
Hayano, Mika, 228; 936
Hayashi, T., 67; 330
Hayes, R. L., 15, 328; 356, 1363
Hayes, S. P., 67; 317
Hayes, T., 137S
Haynes, Florence, W., 67; 10
Hazan, S. J., 287; 643
Hazleton, L. W., 357; 1231
Healey, Ruth B., 41; 260
Hearon, J. Z., 136; 529
Heaton, F. W., 355; 1256
Hecht, H. H., 68, 175; 290, 425
Hegnauer, A. H., 29; 21
Hegsted, D. M., 457; 1534
Hehre, E. J., 471; 1610
Heidelberger, C., 300; 678
Heidelberger, M., 247; 708
Heimberg, M., 228; 1010
Heinle, R. W., 308; 666
Heisler, C. R., 247; 58
Hele, M. P., 218; 999
Helmer, O. M., 59, 228; 6, 773
Helmreich, Mary L., 228; 935
Helwig, H. L., 229; 1087
Heming, A. E., 356, 358; 1119, 1206
Hemingway, A., 487; 46
Heneage, P., 290; 712
Henle, Gertrude, 461, 467; 1600, 1619
Henle, W., 461, 467; 1600, 1619
Henry, J. P., 147; 407
Henry, L., 56; 454
Henschel, A., 68; 221
Heppel, L. A., 229; 909
Heppleston, A. G., 475; 1653
Herbst, E. J., 229; 948
Hernandez-Peon, R., 33; 558
Herring, D. A., 356; 1381
Herrold, Elizabeth A., 68; 235
Hershberger, T., 233; 663

Hertzman, A. F., 127; **42**
Hess, M. E., 47; **72**
Hetzel, B. S., 69; **241**
Hewitt, J., **137S**
Hiatt, E. P., 69; **50**
Hibbett, L. L., 106; **432**
Hickam, J. B., 69; **412**
Hiestand, W. A., 46; **566**
Hift, Helen H., 230; **691**
Higginbotham, A. C., 41; **40**
Higgins, H., 186; **993**
Higgons, R. A., 179; **742**
Hightower, B. M., 230; **730**
Hightower, N. C., Jr., 69; **25**
Hill, C. H., 446; **1517**
Hill, Elsie, 241; **869, 1091**
Hill, J. P., 70; **167**
Hill, R., 15; **356**
Hill, T. L., 70; **332**
Hilleman, M. R., 471; **1601, 1624S**
Hillier, J., 71; **283**
Hilmoe, R. J., 229; **909**
Hilton, J. G., 356; **1362**
Himwich, H. E., 70; **444**
Hind, J. E., 70; **503**
Hine, C. H., 328, 357; **1331, 1382**
Hines, H. M., **281P**
Hinkle, L. E., Jr., 69; **241**
Hipp, N. J., 223; **626**
Hirs, C. H. W., 230; **819**
Hirsch, Barbara B., 164; **163**
Hirschmann, H., 230; **1088**
Hirst, G. J., **1623S**
Hitchcock, F. A., 71; **360**
Hitchings, G. H., 225; **1040**
Hoagland, H., 12, 149; **521, 611**
Hoberman, H. D., 231; **866**
Hochschild, H., 50; **94**
Hodgins, Shirley J., 144; **159**
Hoebelheinrich, L. H., 167; **293**
Hoff, E. C., 71; **445**
Hoffmann, C. E., 231; **758**
Hoffman, J. F., 71, 117; **283, 285**
Hoffman, W. S., 231; **1023**
Hofmann, F. G., 72, 85; **382, 383**
Hogans, Alice F., 274; **1044**
Hogg, J. F., 207, 314; **918, 919**
Hogg, R. V., 341; **1305**
Holaday, D. A., 357; **1286**
Holburn, R. R., 72; **415**
Hollaender, A., **139S**
Holland, Emily G., 357; **1231**
Holland, W. C., 357; **1159**
Hollander, F., 26, 78; **95, 96, 271S**
Hollinger, D. M., 231; **1089**
Holloway, Ann, 483; **1592**
Holloway, R. J., 325; **69**
Holm, L. W., 358; **1383**
Holman, J., 349, 358; **1208, 1271**
Holmes, J. H., 72, 73; **295, 576**
Holmes, T. H., 22; **351**
Holmes, W. L., 271; **1038**
Holtkamp, D. E., 356, 358; **1119, 1206**
Holze, Elizabeth A., 90; **5**
Honig, C. R., 10; **302**
Hoobler, S. W., 82; **77**
Hoobler, S. W., 404; **1345**
Hoppe, J. O., 358; **1280**
Hopper, J., Jr., 17; **222**
Hopps, H. C., 417, 418, 426; **1417, 1433, 1449**
Horecker, B. L., 232; **696**
Hornberger, C., 40; **160**
Horowitz, M., 456; **1530**
Horsfall, F. L., Jr., 471; **1601, 1625S**
Horstmann, Dorothy, 471; **1587**
Horton, R. G., 73; **148**
Horvath, S. M., 73, 170; **300, 370**
Horwitt, B. N., 232; **811**
Horwitz, S. A., 144; **159**
Hoshiko, T., 73; **120**
Houck, C. R., 74; **56**
Houlahan, D. A., 354; **1318**
Houssay, H. E. J., 74; **155**
Hovde, C. A., 107; **374**
Hove, E. L., 446; **1552**
Howard, A. R., 36, 74; **367, 368**
Howard, Evelyn, 75; **463**
Howe, H. A., 471; **1589**
Howell, Constance, 53; **385**
Howell, D. S., 336; **55**
Howland, J. W., 416; **1467**
Hsia, R. S., 232; **934**
Hsu, Betty, 292; **651**
Hubbard, Ruth, 233; **705**
Huddlestun, B., 56; **454**
Hudgins, J. M., 125; **26**
Hudson, G. W., 453; **1532**
Huennekens, F. M., 233; **761**
Huf, E. G., 75; **211**
Huggins, C. G., 261; **1011**
Huggins, R. A., 150, 389; **224, 275P, 1304**
Hulpieu, H. R., **1123**
Hummel, J. P., 279; **769**
Hummell, F. P., 165, **390**
Hunt, Charlotte, 12; **521**
Hunt, C. C., 75; **510**
Hunt, C. H., 233; **663**
Hunt, J. N., 76; **92**
Hunt, R. D., 213; **1328**
Hunter, F. E., Jr., 234; **896**
Hunter, F. R., 7; **289**
Hunter, J., 76; **353**
Hurlbert, R. B., 234; **1037**
Hurley, R. E., 404; **1116**
Hurwitz, J., 234; **749**
Hurwitz, J. J., 123; **450**
Hurwitz, L., 359; **1234**
Hussey, Clara V., 238, 272; **726, 731**
Hutchens, J. O., 76; **459**
Hutchens, T. T., 235, 301; **1061, 1062**
Hutcheon, D. E., 76; **577**
Hutchings, B. L., 303; **724**
Hyder, Nelta, 334; **1186**

Iacobellis, M., 447; **1519**
Ingbar, S. H., 77; **195**
Ingraham, R. C., 51; **140**
Ingram, R. H., 443; **1566**
Inman, V. T., 127; **399**
Irvin, Elinor M., 235; **911**
Irvin, J. L., 235; **911**
Irwin, S., 359; **1212**
Isbell, H., 346, 402; **1185, MP**
Itano, H. A., 235; **789**
Itschner, K. F. 214; **824**
Iwamoto, H. K., 359; **1300**
Izzo, J. L., **1112S**

Jackson, E. B., 469; **1622**
Jackson, J. R., 473; **1614**
Jacobs, E. E., 96; **54**
Jacobs, H. I., 3; **544**
Jacobs, M. H., 77; **286**
Jacobson, E., 77; **393**
Jacobson, L. O., **138S**
Jaffray, Sybil E., 488; **776**
Jailer, J. W., 78; **514**
James, A. H., 40; **62**
Jameson, E., 254; **871**
Jandorf, B. J., 212; **1014**
Janeway, C. A., **1648S**
Jang, Rosie, 236; **1067**
Janowitz, H. D., 26, 78; **95, 96**
Jansen, E. F., 236; **1067**
Janssen, E. F., 484; **1629**
Jaques, L. B., 98, 152; **416, 614**
Jasper, H. H., 64; **441**
Jawetz, E., 428, 472; **1407, 1597**
Jennings, R. B., 417; **1402**
Jensen, H., 221; **1261**
Jensen, R. E., 108; **257**
Jerison, H. J., 78; **504**
Jerrard, W., 21; **218**
Jesseph, J. E., 370; **1273**
Jewell, H. A., 78; **578**
Jochim, K. E., 79; **71**
Joel, W., 418; **1433**
Joftes, D. L., 52; **MP**
Johnson, A. P., 309; **1109**
Johnson, B. C., 204, 448; **725**
Johnson, C. A., 236; **737**
Johnson, D. A., 133; **37**
Johnson, I., 360; **1242**
Johnson, J. A., 23, 79, 181; **83, 492, 812**
Johnson, P., 9; **111**
Johnson, R. M., 236; **990**
Johnson, W. H., 79; **335**
Johnston, C. G., 452; **1497**
Johnston, J. M., 252; **649**
Johnston, T. N., 38; **516**
Jones, F., 110; **57**
Jones, Florence L., 100, 237; **124, 821**
Jones, H. B., 35; **79, 137S**
Jones, J. H., 237; **1021**
Jones, Marion, 218; **982**
Jones, Mary Ellen, 189; **995**
Jones, R. A., **1191**
Jones, R. S., 418; **1434**
Jones, T. L., 72, 85; **382, 383**
Jones, W., 15; **356**
Juster, R. J., 51; **140**
James, M. F., 204
Joseph, N. R., 23; **181**
Josephson, E. S., 351; **1340**
Jukes, T. H., 447; **1512, 791S**

Kabat, H., 92; **168**
Kahn, A. J., 136, 137; **402, 608**
Kahn, R. L., 472; **1627**
Kalnitsky, G., 237; **692**
Kalow, W., 360; **1238**
Kaltenbach, Jane C., 418; **1476**
Kaltenbach, J. P., 237; **857**
Kamijo, K., 360, **1239**
Kane, Margaret, 355; **1122**
Kanter, G. S., 80; **265**
Kao, F., 80; **411**
Kaplan, F. E., 469; **418**
Kaplan, H. S., 428; **1407**
Kaplan, N. O., 238, 286; **908, 1047**
Kalser, M., 79; **30**
Karczmar, A. G., 361, 363, 378; **1240, 1241, 1390**
Karnovsky, M. L., 219; **881**
Karpovich, P. V., 157; **413**
Kaser, Margaret M., 238; **726**
Kass, E. H., 472; **1636**
Katherman, R. E., 188, 189; **774, 1080**
Kattine, A. A., 80; **90**

Katz, A. M., 136; 529
Katz, S., 247, 286; 487, 950
Katzenellenbogen, E. R., 238; 939
Katzman, P. A., 203; 683
Kearns, J. W., 81; 176
Keasling, H. H., 345, 361; 1297, 1321
Keator, J. E., 63; 404
Keats, A. S., 321; 1180
Keiles, E. O., 437; 1573
Keith, E. F., 337, 361, 363; 1376, 1182, 1183
Kelley, Barbara, 238; 838
Kelley, Elsie, A., 340; 1170
Kellogg, W. L., 440; 1507
Kelly, A. R., 419; 1413, 1484
Kelsey, F. E., 380; 1158
Kemph, J. P., 71; 360
Kemp, R. L., 401; 1194
Kempe, C. H., 473; 1614
Kendrick, A. B., 239; 693
Kennedy, E. P., 239; 644
Kennedy, Margaret, 227; 632
Kennedy, T. J., Jr., 81, 115; 123, 185
Kendrick, Mary I., 472; 1636
Kent, J. F., 473; 1662
Kensler, C. J., 362, 365, 366, 652, 859; 1258
Kerman, H. D., 81; 579
Kerr, E. H., 76, 82; 353, 580
Kessler, W. B., 362; 316
Keston, A., 239; 820
Kester, Nancy C., 82; 216
Keys, A., 18, 68, 148, 159; 82, 221, 304, 345, 181; 873
Kiang, S. P., 31; 323, 556
Kibler, R. F., 111; 453
Kiebel, Geraldine, 82; 394
Kiely, Gladys E., 488; 680
Kik, M. C., 447; 1577
Kilburn, Kaye H., 362, 380; 1360, 1361
Kimura, K. K., 363; 1182
King, A. L., 90; 75
King, J. S., Jr., 334; 1186
King, T. E., 454; 1541
Kingsolver, W. R., 82; 77
Kirby, E. L., 71; 445
Kirch, E. R., 236; 737
Kirchheimer, W. F., 316; 1008
Kirschvink, J. F., 404; 1116
Kirkham, W. R., 240; 864
Kleiber, M., 83; 835
Klein, E. P., 417; 1449
Klein, J. R., 240; 975
Klein, M., 488; 680
Kleitman, N., 83; 41
Kletzkin, M., 83; 581
Kline, D. L., 84; 294
Kline, R. F., 84; 339, 582
Kling, A., 142; 443
Klitgaard, H. M., 96; 125
Klotz, I. M., 240; 1090
Knobil, E., 72, 85; 382, 383
Knoebel, L. K., 443; 1566
Knox, W. E., 240; 964
Koch, A. L., 241; 967
Koch-Weser, Dieter, 412, 419; 1469, 1470
Kochakian, C. D., 150, 241; 524, 772
Koda, Florence, 343; 1227
Kodama, J. K., 357; 1382
Koella, W. P., 85; 376
Koehler, A. E., 241; 869, 1091
Koelle, G. B., 360, 363; 1237, 1239
Kohli, J. D., 331; 1344
Kohlstaedt, K. G., 59; 6
Komarov, S. A., 61; 29
Koppanyi, T., 361, 363; 1240, 1241
Koppelman, R., 242; 923
Koprowska, Irena, 420; 1425
Koprowski, H., 420, 427; 1424, 1425
Kornberg, A., 242; 646
Korngold, L., 473, 478; 1637, 1638
Korr, I. M., 162; 34
Koshland, D. E., Jr., 242; 681
Kosman, A. J., 70; 167
Kottke, F. J., 86; 35
Kozelka, F. L., 364, 381; 1301, 1384
Kozloff, L. M., 252; 1095
Krakower, C. A., 416; 1401
Krakusin, J. S., 417; 1402
Kramer, B., 85; 325
Krampitz, L. O., 296; 915
Kraintz, F. W., 159; 60
Kraintz, L., 159; 60
Krantz, J. C., Jr., 331, 371, 378; 1218, 1290, 1291
Krayer, O., 318, 364, 381; 1248, 1249, 1250
Krebs, E. G., 243, 1046
Krebs, J. S., 368; 1298
Kretchevsky, T. H., 238; 939
Krinsky, N. I., 218; 727
Kritchevsky, T. H., 243; 938
Kroc, R. L., 86; 236
Krueger, H., 86, 347; 583
Kruger, L., 99; 373
Kubicek, W. G., 86; 35
Kueter, K. E., 385; 1211
Kuffler, S. W., 87; 171
Kuhl, W. J., Jr., 188; 733
Kumar, S., 87; 78
Kumin, Selma, 285; 784
Kun, E., 364; 849
Kunkel, A. M., 365; 1257
Kunkel, H. O., 243; 808
Kupchan, S. M., 364; 1248
Kupperman, H. S., 318, 365; 1264, 1296
Kuriaki, K., 365; 859
Kurtz, M., 31, 39; 318, 556
Kushnick, J. B., 463; 715
Kuyper, A. C., 251; 814
Kyker, G. C., 243; 1092

Labbe, R. F., 305; 825
Lada, A., 254; 1096
LaDu, B. N., Jr., 244; 927
Lafaye, Jean, 280; 888
Lagerborg, Dorothy L., 478; 1581
Lahey, M. E., 445; 1562
Laidler, K. J., 116; 328
Laird, Anna K., 244; 865
Lajtha, A., 244; 686
Laken, B., 38; 109
Lakshmanan, S., 87; 78
Lamb, Esther, 474; 1612
Lambert, E. H., 87; 359
Lambeth, C. B., 58; 73
Lamfrom, Hildegard, 224; 1030
Lampe, K., 361, 366; 1311, 1321
Lampen, J. O., 244; 759
Landis, E. M., 277P
Landowne, M., 114; 537
Lands, A. M., 351; 1316
Landwehr, Greta, 180; 421
Landy, M., 474; 1612
Lane, N., 31; 556
Lang, C. A., 88; 846
Lang, H. M., 279; 769
Langdell, R. D., 420; 1412
Langdon, R. C., 245; 1064
Lange, J. D., 17; 222
Lange, K., 350
Langemann, H., 362, 366; 652, 1258
Langley, L. L., 88; 519
Langlois, K. J., 88; 98
Languth, Helen W., 89, 160; 233, 584
LaNier, M. L., 396; 128
Lanni, F., 474; 1606
Lanni, Yvonne T., 474; 1606
Lanzoni, V., 397; 1323
Lape, H. E., 89; 433
Lardy, H. A., 210; 891
Larner, J., 245; 699
Larrabee, M. G., 41; 309
Larsen, E. G., 245, 780
Larson, E., 366, 405; 1138, 1314
Larson, P. S., 345, 375, 391; 1139, 1253, 1307
Lasagna, L., 367; 1341
Lasagna, L. A., 337; 1228
Lasater, Mary B., 228; 935
Laschever, Zelda E., 414; 1427
Lasker, S., 48; 395
Laskowski, M., 246; 861
Laspalluto, J., 239; 820
Last, J. H., 1191
Latimer, C., 384; 1190
Laug, E. P., 347; 1236
Lavalle, A., 367; 1385
Lavallee, A., 371; 1129
Lawler, A., 181; 873
Lawler, Coleta, A., 333, 1373
Lawson, H. C., 90; 362
Lawton, R. W., 90; 75
Leary, D. E., 391; 1393
Leathem, J., 362; 316
Leathem, J. H., 53; 385
Leaver, F., 246, 313; 913, 914
Leblanc, J., 33; 322
Ledinko, Nada, 474; 1593
Lee, Kwan-Hua, 246, 897
Lee, N. D., 420; 1468
Lee, R. E., 90; 5
Lee, K. S., 352, 368; 1252, 1274
Lee, W. C., 393; 1394
Lees, H., 447; 1519
Leese, C. E., 42; 560
LeFevre, Marian E., 90; 205
LeFevre, P. G., 90; 205
Legouix, J. P., 30; 502
Lehr, D., 368; 1137
Leidy, Grace, 315; 910
Leighninger, D., 40; 160
Leimdorfer, A., 91; 431, 585
Lein, A., 91; 238
Lein, J., 221; 880
Leinfelder, P. J., 24; 528
Leitch, J. L., 368; 1263
Leiter, L., 60, 171; 192, 299
Lenz, W. R., 55; 1338
Leon, M. A., 247; 708
Leonard, P., 332; 1332
Leonards, J. R., 247; 58
Leong, G. F., 325, 368; 69, 1298
LePage, G. A., 300; 678
Lepeschkin, E., 92; 80
Lepine, C., 37; 369
Lepow, I. H., 247; 950
Lesch, W., 110; 57
LeSher, D. A., 369; 1196
Leslie, S. H., 38; 109
Lesser, G., 92; 268
Lessner, H. E., 47; 72
Lettieri, M., 413; 1441

Lettvin, J., 124; 229
Leverton, R. M., 448; 1492
Levey, H. A., 92; 178
Levine, L., 476; 1664
Levine, M. G., 92; 168
Levine, R., 56; 454
Levine, R. B., 140; 88
Levine, V. E., 247; 1093
Levitt, M. F., 93; 208
Levy, L., 248; 656
Levy, M., 248, 288; 625, 631
Lewis, A. E., 43, 338, 421; 298, 1377, 1418
Lewis, B. M., 57, 93; 149, 150
Lewis, D. W., 248; 419
Lewis, Eunice M., 451; 1535
Lewis, G. T., 248; 879
Lewis, Jessica H., 93; 483
Lewis, J. L., 480; 1595
Lewis, L. A., 102; 384
Lewis, N. G., 404; 1116
Li, C. H., 198, 249; 1022, 1094
Li, T.-H., 369; 1285
Libby, R. L., 467; 1640
Libet, B., 94; 169
Lief, P. A., 369; 1181
Lienke, R., 181; 812
Lifson, N., 94; 498
Light, A. E., 448; 1574
Lilienthal, J. L., Jr., 177; 303
Lillehei, C. W., 15; 296
Lillie, R. D., 387; 1201
Lilly, J. C., 94; 436
Lim, R. K. S., 88, 95; 97, 98
Lin, I., 290; 1036
Lin, P.-H., 448; 725
Lindeman, V. F., 20; 550
Ling, C. T., 249; 669
Ling, G., 95; 500
Ling, J., 378; 1291
Linkenheimer, W., 95; 13
Linker, A., 249; 765
Lionetti, F., 196; 867
Lipmann, F., 189; 995
Lipner, H. J., 96; 125
Lippman, R. W., 96, 250; 54, 586, 635
Lipton, M. M., 299; 767
Lisi, A. G., 369; 1161
Litchfield, J. T., Jr., 386; 1343
Litt, M., 203; 860
Little, J. M., 379; 1391
Little, R. C., 17, 97; 89, 587
Littlefield, J. W., 250, 280; 893, 997
Littlejohn, J. M., 287; 643
Livingston, R. B., 21; 408
Livingston, R. B., 21; 408
Loewi, O., 370; 1135
Logan, M. A., 283; 924
Logwood, G. R., 469; 1670
Lombard, Elna, 97; 85
Lombardo, M. E., 250; 676
London, I. M., 250; 783
Long, J. P., 339; 848
Loomis, T. A., 370; 1273
Locsli, J. K., 439; 1491
Loran, Muriel R., 370; 1364
Lorber, V., 97; 886
Loring, H. S., 251; 905
Louchart, Jean, 78; 514
Louckes, Hortense, 124; 602
Love, R., 421; 1424
Love, W. E., 97; 287
Lovegrove, T. D., 201; 1017
Lowen, M., 181; 873
Lowenthal, J., 98; 416
Lowry, O. H., 295, 3 0; 852, 1207
Lu, F. C., 371; 1129
Lu, Go, 371; 1218
Lucas, C. C., 274; 874
Luck, M., 251; 986
Ludowieg, J., 276; 764
Luduena, F. P., 371; 1281
Ludwig, B. J., 322; 1176a
Lundberg, W. L., 297; 1006
Lundgren, N., 98; 539
Lupton, C. H., Jr., 422; 1436
Lurie, M. B., 475; 1653
Lusky, L. M., 325, 371; 1199, 1355
Lutz, B. R., 52; MP
Lyman, C. M., 243, 437; 808, 1538
Lynen, F., 293; 994
Lyon, J. B., Jr., 442; 1515
Lyons, W. R., 452; 1536

Maas, W. K., 475; 973
MacDonald, N. S., 372; 1463
MacDonald, R. P., 251; 814
MacDonnell, L. R., 209, 1052
Machlin, L. J., 448; 1496
Macht, D. I., 98, 372; 588, 1386
MacKal, R. P., 252; 1095
MacKay, A. M., 331; 1217
MacKenzie, C. G., 252; 649
Mackler, B., 213; 899
MacLeod, R. A., 98; 947
Madden, R. E., 252; 983
Madden, S. C., 421; 1472
Magasanik, B., 922
Magenis, T. P., 99; 589
Magladery, J. W., 83, 160; 233, 584
Mahler, H. R., 233, 253; 761, 963
Mai, Shu-huai, 99; 468
Maison, G. L., 89, 395, 381; 433, 1246, 1247
Malis, L. I., 99; 373
Maloney, A. H., 398; 1213
Maloney, J. V., Jr., 100; 533
Maltaner, F., 272, 416, 481; 1100, 1442, 1663
Maluf, N. S. R., 100; 212
Mandel, E. E., 100, 237; 123, 821
Mandel, H. G., 199, 372, 373; 675, 1187, 1387
Mandel, J., 357; 1286
Mandeles, S., 242; 923
Mandl, I., 253; 813
Mann, F. C., 167, 212; 53, 828
Mann, G. V., 449; 1565
Mann, S., 353; 199
Mansor, L. F., 358; 1119
Marbarger, J. P., 17; 39
March, C. H., 373; 1388
Marcus, S., 475; 1660
Marek, Evelyn, 156; 341
Mark, V. H., 53; 231
Markee, J. E., 101; 398
Marks, A. R., 350; 1207
Markus, G., 9; 490
Marlatt, Abby, 449; 1550
Marmorston, J., 144; 184
Marrazzi, A. S., 164; 379
Marsh, D. F., 356, 373; 1277, 1381
Marsh, R., 352; 1223
Marshall, L. M., 253; 1063
Marshall, R. T., 101; 244
Marti, Helen U., 96; 54, 586
Martin, A. W., 155; 254
Martin, G. J., 253; 875
Martin, Ruth A., 428; 1420
Martin, S. P., 256; 1016
Martindale, W. E., 115; 8
Marucci, A. A., 476; 1609, 1664
Marx, W., 254; 871
Mason, H. S., 254; 688, 1096
Mason, K. E., 449; 1558
Mason, M., 254; 735
Masoro, E. J., 101; 67
Masson, G. M. C., 102; 384
Mateyko, Gladys M., 41; 260
Mathes, S., 352; 1223
Mathews, M. B., 255; 762
Mathies, J. C., 255, 743
Mathura, G. R., 300; 823
Matschiner, J. T., 57; 284
Mattis, P. A., 355, 387; 198, 1147
Maurer, P. H., 466, 476, 484; 1628, 1631, 1632
Mauro, A., 102; 81
Maxwell, M. H., 142; 609
May, S. C., Jr., 282; 1073
Mayer, Jean, 436, 444, 450, 457; 1523, 1546, 1567, 1568, 1569
Mayer, M. M., 476, 479; 1639, 1664, 1665
Mayer, R. L., 288; 944
Mayer, Sylvia, 118; 595
Mayerson, H. S., 168; 141
Maynard, F. W., 52 MP
Maynard, L. A., 430; 1491, J.S.
Mayock, R. L., 153; 301
McArthur, M. W., 404; 1116
McCann, Frances V., 102; 252
McCarthy, M. D., 102; 20
McCarthy, P., 250; 676
McCarthy, Patricia T., 450; 1554
McCarty, J. E., 106; 432
McCay, C., 427; 1487
McChesney, E. W., 103; 346
McClaughry, R. I., 103; 423
McConnell, K. P., 255; 738
McCrea, J. F., 476; 1605
McCuistion, A. C., 362, 380; 1360, 1361
McDaniel, E. G., 450; 1503
McDonald, G. O., 1191
McDonough, F. J., 388; 1392
McDonough, J., 173; 223
McElroy, W. D., 256; 689
McEnery, W. B., 103, 104; 175, 590
McEnroe, W., 104; 251
McGinnis, J., 450; 1543
McGrath, F. P., 374; 1174
McGuire, T. F., 173; 223
McIntire, F. C., 104; 482
McKay, B. P., 205; 954
McKee, R. W., 256; 978
McKeever, W. P., 119; 366
McKibbin, J. M., 256; 642
McKinney, G. R., 256; 1016
McManus, J. F. A., 422; 1436
McMeekin, T. L., 223; 626
McMillan, D. V., 371; 1129
McNamara, B. P., 322; 1233
McNeil, E. H., 20; 526
McQueen, J. D., 104; 1
Meacham, G. C., 308; 666
Mead, J., 105, 172; 414, 534
Mead, J. F., 257; 980
Medes, Grace, 257; 1058
Megirian, D., 374; 1154
Mehler, A. H., 374, 395; 931, 932
Meilman, E., 318; 1243
Meisel, E., 432; 1431
Meister, A., 268; 1049
Meites, J., 105; 349

Melampy, R. M., 105; **177**
Melcher, L. R., 422; **1464**
Mellors, R. C., 257; **790**
Melnick, J. L., 469, 474; **1593, 1596**
Meltzer, H. L., 258; **1020**
Meneely, G. R., 106; **432**
Menkin, V., 106; **387**
Meranze, D. R., 210, 469; **418, 564**
Meredity, O. M., 397; **1232**
Merkel, J. R., 374; **1342**
Merrell, M., 119; **366**
Merrick, A. W., 106; **591**
Merrifield, R. B., 258, 458; **756, 1537**
Merrill, J. P., 67; **10**
Metcalfe, J., 8; **297**
Mettler, F. A., 107; **374**
Metz, Delilah B., 147; **12**
Metzler, D. E., 258; **1050**
Meyer, A. E., 107; **457**
Meyer, D. K., 107; **592**
Meyer, K., 249; **765**
Meyer, R. H., 402; **1398**
Meyerhof, O., 258; **958**
Meyers, F. H., 375; **1133**
Michel, H. O., 259; **718**
Michie, A. J., 108; **119**
Michie, Catherine R., 108; **119**
Migliarese, J. F., 307; **736**
Mihalyi, E., 259; **326**
Mii, S., 222; **996**
Milch, L. J., 487; **11**
Miles, J. S., 259; **815**
Miley, E., 263; **1029**
Militzer, W., 260; **1007**
Miller, A., 304, 318; **1070, 1264**
Miller, A. W., 375; **1253**
Miller, C. A., 302; **945**
Miller, E. C., 191; **1081**
Miller, Elizabeth E., 260; **704**
Miller, F. A., 18; **409**
Miller, G., 42; **561**
Miller, Gail L., 260; **704**
Miller, J. A., 191; **1081**
Miller, L. L., 260; **984**
Miller, Lila, 260; **1076**
Miller, O. N., 261; **422, 435; 1011, 1480, 1570**
Miller, R., 169; **219**
Miller, R. W., 416; **1467**
Miller, W. L., Jr., 261; **638**
Millican, R. C., 375; **1202**
Mills, A. H., 435; **1571**
Mills, F. G., 89; **433**
Mills, L. C., 360, 391; **1200, 1242**
Minard, D., 108; **257**
Minor, A. H., 422; **1410**
Minton, R., 238; **726**
Minton, S. A., Jr., 485; **1616**
Minz, B., 376; **1150**
Mirkin, B. L., 376; **1309**
Miroff, M. C., 108, **250**
Mitchell, A., 448; **1492**
Mitchell, Margaret C., 261, 296; **862, 1097**
Mitchell, Ruth, 332, 376; **1140, 1353**
Mixter, G., Jr., 16; **220**
Moe, G., 384; **1190**
Moe, G. K., 352; **1245**
Molnar, G. W., 108; **352**
Mommaerts, W. F. H. M., 261; **703**
Monier, Mary Mills, 451; **1556**
Monroe, C. W., 407; **1428**
Monson, W. J., 202; **843**
Montemurro, D., 154; **38**
Montgomery, A. V., 72, 73; **295, 576**
Moore, Bernice M., 327, 377, 379; **1335, 1336, 1369**
Moore, F. D., 40; **62**
Moore, P. E., 377; **1349**
Moore, W. T., 327, 377, 379; **1335, 1336, 1369**
Morales, M. F., 70; **332**
Moran, J. J., 189; **1080**
Morehouse, Margaret G., 262; **883**
Moreland, F. B., 423; **1414**
Morgan, Agnes Fay, 451; **1535**
Morgan, W. Y., 42; **1283**
Morris, J. A., 477; **1582**
Morris, L. E., **1220**
Morrison, F. C., Jr., 409; **1485**
Morrison, P. R., 262; **486**
Morrow, P. E., 423; **538**
Morse, Anna, 263; **1029**
Morse, M. S., 357; **1382**
Mosberg, W. H., Jr., 109; **228**
Moses, Frances E., 276; **764**
Mosey, L., 377; **1128**
Mosteller, F., **1113S**
Motley, H. L., 109; **479**
Moulden, Elizabeth J., 221; **1261**
Mountain, C. F., 381; **1247**
Mountcastle, V. B., 109; **307**
Moyer, J. H., 346, 378; **1193, 1225**
Moyer, J. H., 391; **1200**
Mudge, G. H., 109; **51**
Mueller, A. J., 439, 441; **1509, 1521**
Mueller, C. B., 157; **113**
Mueller, G. C., 262; **989**
Muhrer, M. E., 409; **1485**
Muirhead, E. E., 110; **57**
Mulder, A. G., 110; **424**
Müller, O. H., 110; **629**
Mullins, L. J., 111; **312**
Munan, L. P., 42; **560**
Munro, Muriel P., 248; **419**
Munson, P. L., 263; **1029**
Muntz, J. A., 263; **752**
Murphy, Q. R., 335; **1259**
Murray, Laurie, Ann, 354; **1318**
Murray, M., 174; **210**
Murray, T. K., 451; **1551**
Musacchia, X. J., 111; **247**
Muschel, L. H., 477; **1645**
Musser, Ruth, 378; **1291**
Myers, J. D., 111; **453**
Myers, J. W., 179; **972**
Mylroie, A., 293; **971**

Nachmansohn, D., 4; **256**
Nadel, E. M., 263, 425; **943, 1474**
Nagler, Mary E., 263, 298; **831, 882**
Nahas, G. G., 113, 487; **17, 46**
Nahum, L. H., 102, 148; **81, 429**
Nakamura, M., 378, **1389**
Nakao, A., 19, 111, 157; **63, 64, 127**
Nakauchi, M., 378, **1390**
Nall, D. M., 241; **772**
Nardone, R. M., 112; **86**
Nash, J. B., 318, 377, 379; **1308, 1335, 1336**
Nason, A., 264; **803**
Nasset, E. S., 134, 452; **23, 1500**
Natelson, S., 264; **817**
Negrete, J., 32; **386**
Neill, J. M., 471, **1610**
Nelson, A., 142; **609**
Nelson, A. A., 345; **1334**
Nelson, D. H., 379; **1299**
Nelson, Marjorie M., 45, 452; **103, 1536**
Nelson, W. O., 103, 104; **175, 590**
Nesbett, Frances B., 227; **829**
Neuberg, C., 253; **813**
Neufeld, Elizabeth F., 238; **1047**
Neuhaus, O., 260; **1076**
Neuman, W. F., 278; **641**
Neurath, H., 265; **1072**
Newcomb, E. H., 295; **1056**
Newcomb, Ethel, 313, **885, 1110**
Newlin, Nancy, 102; **20**
Newman, E. V., 119; **366**
Ngai, S. H., 51, 112; **215, 446**
Nichol, C. A., 452; **842**
Nichols, J., 112, 379; **448, 1391**
Nichols, Mary P., 15; **340**
Nicholson, J. W., III, 113; **17**
Nickel, J. F., 113; **52**
Nickerson, M., 404, **1345**
Nicoll, P. A.; 169; **MP**
Nijjar, V. A., 264; **711**
Nilsson, R. E., 362, 380; **1360, 1361**
Nims, L. F., 157; **135**
Nims, R. G., 113; **478**
Nino, H., H., 438; **1531**
Nisell, O., 113; **478**
Nisselbaum, J. S., 187; **682**
Noall, M. W., 265; **779**
Noble, R. L., 58; **179**
Noe, Elsie, 265; **858**
Noell, W. K., 114; **355**
Noonan, Ann M., 114; **131**
Noonan, T. R., 4, 114; **131, 785**
Nord, F. F., 198; **1055**
Norris, A. H., 114; **537**
North, W. C., 380, 383; **1203, 1357**
Northup, D. W., 155; **617**
Norton, S., 42, 403; **1279, 1283**
Nothacker, W. G., 408, **1452**
Notrica, S. R., 312; **1024**
Novack, Beatrice G., 276; **674**
Novak, E. A., 95; **97**
Novikoff, A. B., 265; **858**
Nowinski, W. W., 176; **525**
Nygaard, A. P., 454; **1541**
Nygaard, O., 266; **753**

Oberman, J., 350
Oberst, F. W., 374; **1174**
O'Brien, M. C., 411; **1460**
Ochoa, S., 293; **994**
O'Connor, J. P., 412; **1482**
O'Connor, J. R., 477; **1582**
Ofner, P., 211; **856**
Ogilvie, M. W., 98; **416**
Ogle, J. D., 266; **951**
Ohlson, Margaret, 457; **1527S, 1544**
Oikemus, A. H., 365; **1257**
Okinaka, A. J., 341; **1378**
Okita, G. T., 380; **1158**
O'Leary, J. F., 340; **1152**
Oleson, J. J., 301; **895**
Olitsky, P. K., 483; **1656**
Oliver, Jean, 96; **586**
Oliver, R. J., 392; **1312**
Olmsted, P. S., 266; **673**
Olpin, H., 394; **1117**
Olsen, N. S., 115; **8**
Olson, J. A., 266; **1098**
Olson, M. E., 86; **35**
Olson, R. A., 115; **797**
Olson, R. E., 223; **1060**
Olson, R. W., 65; **157**
Omachi, A., 110; **424**

Opkyke, Marion, 426; **1486**
Orbach, H. K., 390; **901**
Orloff, J., 81, 115; **123, 185**
Orris, L., 467; **1657**
Orsini, D., 39; **101**
Orten, Aline U., 452; **1497**
Orten, J. M., 245; **780**
Orth, O. S., 331, 335, 393; **1217, 1259, 1394**
Osnos, Martha, 202; **763**
Ostenso, R., 176; **438**
Ouellet, L., 116; **328**
Ourisson, P., 381; **1250**
Overman, R. R., 116; **491**
Owen, C. A., Jr., 267; **809**
Owens, Janet P., 453; **1532**

Packchanian, A., 477; **1666**
Page, I. H., 102, 116; **384, 593**
Palatine, I. M., 275; **677**
Palm, Lucille, 209; **966**
Palmer, J. F., 354; **1163**
Palumbo, F., 352; **1223**
Pannell, L., 470; **1642**
Papacostas, C. A., 381; **1247**
Papper, E. M., 369; **1181**
Parente, N., 241; **772**
Parish, H. H., Jr., 350; **1207**
Parkins, W. M., 116, 117; **144, 594**
Parpart, A. K., 117; **285**
Parrish, R. G., 222; **900**
Parry, R., 354; **1163**
Parsons, J., 397; **1232**
Parter, J. C., 105; **177**
Partridge, L. D., 117; **164**
Partridge, Mary H., 158; **618**
Pascale, L., 231; **1023**
Paschkis, K. E., 22, 118; **112, 552**
Passmann, J. M., 311; **1075**
Paterson, P. Y., 478; **1655**
Paton, R. R., 139; **91**
Patt, H. M., 118, 149; **136S, 203, 595, 612**
Patterson, E. L., 267; **661**
Patterson, Jean M., 274; **874**
Patterson, T. L., 119; **248**
Patton, H. D., 119, 175; **230, 232**
Patton, Mary Brown, 449; **1550**
Paul, O., 431; **1437**
Paul, W., 119; **536**
Paul, W. D., 278; **1104**
Paulissen, L. J., 146; **132**
Paullus, Katheryn, 413; **1446**
Payne, H. G., 392, 488; **1108, 1204**
Pazur, J. H., 267; **700**
Pearce, M. L., 119; **366**
Pearlman, M. R. J., 268; **775**
Pearlman, W. H., 268; **775**
Pearson, H. E., 478; **1581**
Pearson, P. B., 448; **1496**
Pearson, W. N., 453; **1532**
Pecora, L. J., 453; **1539**
Pedrero, E., Jr., 364, 381; **1301, 1384**
Peiss, C. N., 120; **45, 596**
Pelikan, E. W., 382; **1278**
Penrod, K. E., 120; **204**
Pensky, J., 247; **950**
Peoples, S. A., 382; **1171**
Peralta, P. H., 231; **866**
Perkins, J. F., Jr., 79, 121; **335, 597**
Perkinson, J. D., Jr., 328; **1363**
Perlmutt, J. H., 116, 117; **144, 594**
Perry, H. M., 121; **267**
Persky, H., 268; **734**
Peters, D. C., 121; **598**
Peters, L., 382; **1198**
Peters, R. M., 122; **153**
Petersen, D. F., 340; **133S**
Peterson, E. A., 268; **1049**
Peterson, L. H., 122; **76, 274P**
Peterson, W. H., 298; **723**
Petit, E. L., 298; **628**
Petrenco, Helene V., 472; **1627**
Pett, L. B., 453; **1547**
Pettinga, C. W., 268; **701**
Pfiffner, J. J., 269; **844**
Philips, F. S., 225; **1040**
Phillips, R. A., 122; **183**
Pick, Ruth, 122; **599**
Pierce, J. V., 294, 458; **660, 1505**
Piliero, S. J., 123; **513**
Pillemer, L., 313, 480; **949, 1644**
Pincus, G., 131; **389**
Pincus, I. J., 123; **450**
Pincus, J. B., 269; **729**
Pinkerton, H., 432; **1481**
Pinto, H. B., 49; **59**
Pirani, C. L., 51, 423, 429; **140, 1453, 1454**
Pitt, Alice A., 13; **117**
Pittinger, C. B., 382; **1219**
Pitts, R. F., 123; **190**
Pitts, W., 124; **229**
Plager, J. E., 383; **1268**
Platner, W. S., 124; **600**
Plaut, G. W. E., 269; **1009**
Plaut, Katherine L., 269; **1009**
Plescia, O. J., 247; **708**
Plummer, A. J., 320, 349, 383, 387, 399; **1131, 1222, 1224, 1243, 1306**
Podber, Estelle, 265; **858**
Podolsky, Betty, 761; **459**
Polakoff, P. P., Jr., 180; **714**
Polissar, M. J., 124; **336**
Pollack, A. D., 431; **1429**
Pomales-Lebron, A., 435; **1540**
Poncher, H. G., 304; **665**
Popper, H., 412, 419, 431; **1469, 1470, 1477**
Porrata, Elba Iris, 243; **1092**
Porter, R. W., 124; **182**
Potter, J. L., 195; **755**
Potter, R. L., 270; **892**
Potter, V. R., 270; **898**
Powella, Rita, 206, 428; **721, 1430, 1489**
Power, Marschelle H., 267; **809**
Praglin, J., 125, 149; **601, 611**
Pratt, H. M., 270; **870**
Prescott, E., 397; **1232**
Pressman, B. C., 271; **894**
Pressman, D., 473, 478; **1637, 1638**
Pribram, K. H., 99; **373**
Pribyl, E. J., 340; **1152**
Price, W. A., Jr., 455; **1498**
Pricer, W. E., Jr., 242; **646**
Priest, S. G., 309; **1466**
Probst, H. H., 60; **570**
Prusoff, W. H., 271; **1038**
Pruzansky, J. J., 479; **1643**
Pugsley, L. I., 488; **776**
Purdy, C. V., 463; **715**
Purdy, F. A., 127; **603**
Putnam, E. W., 226; **805**
Putnam, F. W., 209, 271; **996, 1099**
Putzki, Ann, 455; **1578**

Quastel, J. H., 272; **1012**
Quick, A. J., 272; **731**
Quigley, J. P., 124, 125; **26, 602**
Quintana, Maria L., 243; **1092**

Raben, M. S., 126; **108**
Racker, E., 201; **697**
Radford, E. P., Jr., 126; **4**
Radomski, J. L., 336, 383; **1144, 1145**
Rafter, Gale W., 243; **1046**
Rahn, H., 155; **406**
Raila, F. A., 99; **468**
Raisz, L. G., 126; **189**
Rakoff, A. E., 268; **775**
Rall, D. P., 383; **1357**
Ralli, Elaine P., 54, 440; **522, 1514**
Ralston, H. J., 127; **399**
Ramakrishnan, C. V., 218; **999**
Ramsey, R. H., 306; **863**
Randall, Barbara, 164; **342**
Randall, L. O., 322, 384; **1176, 1282**
Randall, W. C., 127; **42**
Randolph, M. L., 220; **872**
Ranney, R. E., 127; **497**
Rapp, H. J., 479; **1665**
Rapport, D., 144; **259**
Rapport, M. M., 272, 416; **1100, 1442**
Rask, I., 144; **184**
Rasmussen, A. F., Jr., 444; **1516**
Ratcliffe, H. L., 424; **1455**
Rathbun, R. C., 384; **1230**
Rather, L. J., 424; **1404**
Ratner, B., 479; **1658**
Rau, G. C., 127; **603**
Rawi, I. E., 444; **1502**
Raymond, Ruth, 431; **1429**
Rebuck, J. W., 424; **1421**
Recant, Lillian, 272; **834**
Redmond, R. F., 487; **11**
Reddy, D. V. N., 250, 273; **676, 1101**
Reed, L. J., 273; **662**
Reed, C. I., 128; **263**
Reeve, E. B., 128; **15**
Rehm, W. S., 81, 128; **100, 579**
Reich, H., 273; **933**
Reichman, S., 318; **1264**
Reid, A. F., 165; **239**
Reid, J. D., 345; **1139**
Reid, Mary Elizabeth, 453; **1533**
Reineke, E. P., 50; **242**
Reinhardt, W. O., 128; **604**
Reitze, W., 320, 383; **1131, 1222**
Reller, H. H., 464; **1639**
Remington, J. W., 36; **274P, 275P**, 368
Rene, R. M., 162; **147**
Reinhold, J. G., 274; **1044**
Rennick, Barbara, 384; **1190**
Rennie, L. E., 71; **445**
Renold, A. E., 227; **829**
Reynolds, Monica, 129; **16**
Reyes, M., 131; **606**
Rhodes, Bonnie, 338; **1377**
Rice, C. N., 268; **701**
Rice, F. A. H., 479; **1665**
Rice, L. I., 180, 254; **871, 878**
Richards, Alice B., 20, 317, 385; **1155, 1156, MP**
Richards, R. K., 385; **1211**
Richards, V., 8; **297**
Richardson, A. W., 82, 377, 386; **216, 1348, 1349**
Richardson, E., 35; **107**
Richardson, J. A., 385; **1325**
Richardson, L. R., 437; **1538**
Richmond, J. E., 280; **781**
Richter, G. W., 425; **1423**
Rick, J. J., 213; **1027**
Ridenhour, E., 254; **871**

Rider, J. A., 386; **1235**
Ridout, Jessie H., 274; **874**
Rieders, F., 352, 386; **1141, 1274**
Rigdon, R. H., 422; **1480**
Riggs, A. F., 274; **787**
Riggs, T. R., 275; **677**
Riker, A. J., 206; **801**
Riley, R. L., 129; **474**
Riley, V., 193; **796**
Rinehart, R. K., 68; **235**
Rinfret, A. P., 251; **905**
Rinzler, S. H., 164; **163**
Riordan, J. T., 474; **1593**
Risley, H. A., 181; **728**
Ritter, C., 288; **944**
Rivero-Fontan, J., 118; **112**
Robb, Jane, S., 129; **84**
Robbins, F. C., 467, 486; **1583, 1591**
Robbins, K. C., 479, 480; **1644**
Roberts, E., 275; **713**
Roberts, Gwen, 386; **1348**
Roberts, Harriett, 454; **1545**
Roberts, Kathleen E., 130; **118**
Roberts, S., 144, 275; **184, 1102**
Robertson, W. Van B., 454; **1553**
Robinson, C. S., 198; **1059**
Robinson, W. D., 213, 388; **1027**
Robscheit-Robbins, F. S., 299; **636**
Rockhold, W. T., 46; **566**
Rodahl, Kaare, 130; **343, 605**
Rodbard, S., 131; **156, 606**
Roderuck, Charlotte, 442, 454; **1545, 1548**
Rodwell, V. W., 373; **1187**
Roe, J. H., 455; **1555**
Roepke, R. R., 386; **1343**
Rogers, B. H., 364; **1248**
Rogers, D., 454; **1541**
Rolfe, D. T., 20; **526**
Roma, Michael, 259; **815**
Romanoff, Louise P., 131; **389**
Romans, W. E., 205; **954**
Roos, A., 122; **153**
Root, W. S., 8; **214**
Rose, C. L., 332; **1372**
Rose, H. M., 479; **1603**
Rose, I. A., 276; **760**
Rose, J. E., 109; **307**
Roseman, S., 276; **764**
Rosenberg, B., 131; **245**
Rosenberg, I. N., 126; **108**
Rosenblith, W. A., 132; **501**
Rosenblueth, R., 67; **330**
Rosenbluth, M. B., 318; **1264**
Rosenburg, M. J., 3; **544**
Rosenfeld, L., 276; **709**
Rosenkrantz, H., 133; **105**
Rosenman, R. H., 132; **607**
Rosenthal, H. L., 435; **1571**
Rosenthal, O., 276; **674**
Rosenthal, R. M., 347; **1142**
Rosenthal, S. M., 375, 387; **1201, 1202**
Rosenwasser, E., 277; **1103**
Rosenzweig, M. R., 132; **501**
Rosiere, G., 88; **98**
Ross, B. B., 132; **470**
Ross, J. F., 411, 413, 414; **1459, 1460, 1461**
Rossiter, R. J., 231, 277; **991, 1089**
Roth, F. J., Jr., 415; **1426**
Roth, Florence, 479; **1644**
Roth, Grace M., 133; **37**
Roth, J. S., 277; **746**
Roth, K., 210, 344; **420, 564**
Roth, L. W., 104; **482**
Rothchild, I., 32; **104**
Rothstein, A., 133; **458**
Rothman, S., 415; **1475**
Rothstein, M., 278; **889**
Rouser, G., 183, 278; **641, 827**
Routh, J. I., 278; **1104**
Rowen, J. W., 278; **903**
Ruane, M., 110; **424**
Rubin, Betty L., 133; **105**
Ruchman, I., 480; **1580**
Rudin, D. O., 133; **311**
Rudney, H., 279; **890**
Ruliffson, W. S., 279; **769**
Rullo, F. R., 321; **1173**
Rundles, R. W., 256; **1016**
Ruoff, P. M., 307; **917**
Rupe, C. O., 279; **979**
Rushmer, R. F., 134; **305**
Russell, Elizabeth S., 425; **1406**
Russell, Jane A., 14; **455**
Russell, R. A., 134; **23**
Russell, Ruth, 450; **1567**
Russell, W. C., 455, **1498**
Russo, H. F., 13; **117**
Rust, J. H., 135; **130**
Rutledge, R., 387; **1224**
Ryan, Jean, 265; **858**
Ryan, M., 171; **427**

Sable, H. Z., 280; **754**
Sackler, R. R., 387; **1209**
Sacks, J., 135; **451**
Saffran, M., 135; **518**
Sahyoun, P. F., 391; **1307**
Saiki, H., 131; **606**
St. George, R. C. C., 153; **508**
Sakami, W., 280; **888**
Salerno, P. R., 387; **198**
Salhanick, H. A., 265; **779**
Salk, J. E., 480; **1595**
Salk, J. E., 486; **1594**
Salomon, K., 4, 280; **781, 785**
Salter, W. T., 160, 388; **401, 1162**
Samaras, S. C., 135; **143**
Samiy, A. E., 136; **237**
Sampson, Myra M., 455; **1578**
Samson, F. E., 136; **529**
Samuels, A. J., 68; **290**
Samuels, L. T., 228, 383; **935, 1268**
Samuels, M., 288; **944**
Sanadi, D. R., 250, 280; **893, 997**
Sanadi, D. R., 280; **997**
Sandage, C. N., 281; **637**
Sandman, R. P., 261; **1011**
Sandow, A., 82, 136, 137; **394, 402, 608**
Sanford, J., 409; **1458**
Sangren, W., 147; **495**
Sapirstein, L. A., 137; **7**
Sarett, H. P., 205; **1083**
Sarkar, N. K., 253; **963**
Sarnoff, S. J., 12, 137; **151, 152**
Sartorius, O. W., 137; **188**
Sauberlich, H. E., 281; **740**
Saunders, F. J., 351, 388, 394; **1302, 1319, 1392**
Saunders, J. P., 388; **1172**
Savard, K., 281; **940**
Sawyer, C. H., 138; **173**
Sax, Mary F., 356; **1206**
Saxena, H., 450; **1543**
Saxton, J., 427; **1487**
Saxton, Ruth, 150, 389; **224, 1304**
Scanlon, L. J., 61; **571**
Schaefer, K. E., 138; **410**
Schaffer, N. K., 282; **1073**
Scharf, V., 308; **666**
Schayer, R. W., 282; **1032**
Schechter, D. C., 469; **418**
Schein, A. H., 282; **1105**
Schepartz, B., 425; **1474**
Scher, A. M., 139; **91**
Schiller, A. A., 139; **494**
Schlecker, A. A., 318; **1264**
Schlegel, J. U., 139; **48**
Schlenk, F., 289; **921**
Schlesinger, Hilde, 128; **100**
Schlesinger, R. W., 480; **1604**
Schlumberger, H. G., 425; **1462**
Schmidt, C. F., 6; **546**
Schmidt, E. R , 393; **1394**
Schmidt, G., 283; **907**
Schmidt, G. C., 283; **924**
Schmidt, J. L., 388; **1276**
Schmidt-Nielson, Bodil, 140; **122**
Schmidt-Nielsen, K., 140; **249**
Schmitt, O. H., 140; **88**
Schnabel, T. G., Jr., 153; **301**
Schneider, J. J., 263; **943**
Schneider, Rose M., 140; **523**
Schneiderman, A., 3; **544**
Schocken, V., 455; **1555**
Schoepfle, G. M., 141; **170**
Scholander, P. F., 141; **461**
Schoof, H. F., 483; **1585**
Schreiber, M., 438; **1531**
Schreiner, G. E., 141; **371**
Schreiner, L., 142; **443**
Schrek, R., 426; **1416**
Schroeder, L. J., 447; **1519**
Schroeder, M. A., 434; **1432**
Schuchardt, Grace S., 13; **117**
Schueler, F. W., 342, 345, 361, 366, 389; **1297, 1311, 1320, 1321, 1379**
Schulman, S., 286; **487**
Schultz, P., 154; **616**
Schuman, H. L., 482; **1618**
Schwan, H , 142; **264**
Schwartz, I. L , 142, 161; **43, 44, 609**
Schwartz, T. B., 143; **1068**
Schwarz, K., 200, 455; **1082, 1494**
Schweigert, B. S., 276, 456; **760, 1499**
Schwenk, E., 143; **467**
Schwerin, Paula, 244; **686**
Schwert, G. W., 220; **716**
Schwimmer, S., 283; **634**
Schwinghamer, L. A., 488; **776**
Scokel, P. W., 88; **519**
Scott, D., Jr., 143; **225**
Scott, D. B. M., 284; **850**
Scott, J. C., 10; **548**
Scott, J. F., 288; **778**
Scott, M. E., 123; **450**
Scott, W. W., 81; **176**
Scow, R. O., 174; **456**
Scrimshaw, N. S., 445; **1549**
Scull, E., 405; **1270**
Seager, L D., 343; **1352**
Sear, H., 128; **15**
Searle, G. W., 144; **159**
Searle, Norma Z., 184; **810**
Seegers, W. H., 103; **423**
Seegmiller, J. E., 284; **853**
Segal, H. L., 284; **855**
Segaloff, A., 429; **1444**
Seibert, R. A., 389; **1304**
Seidlin, S. M., 184; **810**
Seifter, J., 338, 342, 348, 389; **1265, 1266, 1267, 1322**

Selkurt, E. E., 144; **114**
Sellers, A., 144; **184**
Sellers, E. A., 9; **357**
Selye, H., 144; **391**
Semler, H. J., 335; **1374**
Semmett, W. F., 220; **710**
Semple, R. E., 144; **142**
Sendroy, J., Jr., 285; **807**
Seraydarian, K., 283; **907**
Seraydarian, Maria, 144, 283; **259, 907**
Settlage, P., 176; **438**
Sevag, M. G., 293; 481; **1039, 1608**
Sevy, R. W., 145; **2**
Shack, E. R., 357; **1382**
Shack, J., 422; **1464**
Shackelford, E. D., 71; **445**
Shadle, O. W., 46, 145; **363, 364**
Shanes, A. M., 146; **314**
Shapiro, H., 146; **27**
Sharp, E. H., 71; **445**
Shaw, J. C., 87; **78**
Shaw, J. E., 90; **362**
Shay, H., 61, 156; **29, 93**
Sheatz, G. C., 361, 363; **1240, 1241**
Shechmeister, I. L., 146; **132**
Sheehan, H. L., 112; **448**
Shemin, D., 285; **784**
Sheppard, C. W., 147, 173; **134, 495**
Sherman, I. R., 194, 285; **1015, 1054, 1106**
Sherrod, T. R., 323; **1192**
Shideler, E. M., 426; **1417**
Shideman, F. E., 339, 359, 369, 384; **1195, 1196, 1212, 1230**
Shigeura, H., 286; **929**
Shils, M. E., 456; **1530**
Shinowara, G. Y., 276, 432; **709, 1445**
Shive, W. R., **792S**
Shock, N. W., 15, 114; **340, 537**
Shockman, G. D., 286; **920**
Shore, M. L., 147; **610**
Shore, P. A., 326; **1287**
Shorr, E., 7, 147, 177; **12, 19, 22**
Shuck, E. A., 43, 421; **298, 1418**
Shuster, L., 286; **908**
Shutt, J., 354; **1130**
Sichel, F. J. M., 40; **396**
Sideri, Catherina N., 318; **1339**
Siegel, A. L., 28; **47**
Siegel, E., 184; **810**
Siegel, J. M., 287; **795**
Sieker, H. W., 147; **407**
Sikand, R. S., 102, 148; **81, 429**
Silberberg, M., 426; **1486**
Silberberg, Ruth, 426, 427; **1486, 1487**
Siliciano, Ann M., 452; **1500**
Silver, L., 142; **609**
Silverman, S., 85; **325**
Silverstein, A. M., 481; **1663**
Simmons, N. S., 390; **901**
Simonart, A., 390; **1210**
Simonson, E., 148; **82**
Simonson, H. C., 270; **898**
Sinex, F. M., 135; **451**
Singal, S. A., 287; **643**
Singer, E., 250; **676**
Singer, L., 181; **812**
Singer, R. B., 149; **121**
Singian, E., 42; **561**
Sinkoff, M. W., 31; **323**
Sinscheimer, R. L., 287; **904**
Siplet, H., 156; **93**
Sirota, J. H., 149; **49**
Sissons, H. A., 427; **1478**
Sizer, I. W., 11; **460**
Skelton, F. R., 390; **1251**
Skelton, J. A., 391; **1200**
Slater, I. H., 340, 391; **1152, 1393**
Slaunwhite, W. R., Jr , 288; **778**
Sleator, W. W., Jr , 141; **170**
Sloan, Jewell W., 206; **1124**
Sloane, N. H., 288; **944**
Slobodian, E , 288; **631**
Slobody, L., 350
Slocombe, A., 149; **611**
Smadel, J. E., 466, 469; **1621, 1622**
Smith, B. S., **279P**
Smith, D. E., 118, 149; **595, 612**
Smith, D. J., 288; **350**
Smith, D. T., 481; **1654**
Smith, D. W., 248; **879**
Smith, Edwin L., 150; **224**
Smith, Emil L., 179; **1065**
Smith, F. H., 355; **1122**
Smith, G., 40; **160**
Smith, H. T., 65; **157**
Smith, H. W., **270S**
Smith, Janice, 457; **1544**
Smith, L. B , 380; **1158**
Smith, Lucile, 289; **959**
Smith, Margaret, H. D., 482; **1617**
Smith, N. H., 329; **1324**
Smith, P. K., 199, 372, 373; **675, 1187, 1387**
Smith, Patricia H., 304; **706**
Smith, Phyllis, 292; **651**
Smith, R. B., Jr., 345, 391; **1139, 1307**
Smith, R. L., 289; **921**
Smith, R. M., 328; **1214**
Smith, S., III, 144; **184**
Smith, S. A., 483; **1585**
Smith, T C., 150; **524**
Smithburn, K. C., 482; **1579**
Smithwick, Betty, 478; **1655**
Smyrniotis, P. Z., 232; **696**
Smythe, C. McC., 113; **52**
Snair, D. W., 488; **776**
Snavely, J. R., 220; **872**
Snell, E. E., 258; **1050**
Snider, R. S , 150; **372**
Snoke, J., 315; **687**
Snow, C. M., 425; **1406**
Snyder, F. F., 150; **613**
Snyder, J., 151; **310**
Sober, H. A., 268, 310; **1049, 1501**
Sokalchuk, A., 151; **430**
Sokoloff, B., 206, 427, 428, 441; **721, 1430, 1488, 1489, 1557**
Solomon, A. K., 151; **206, 273S**
Sols, A , 199; **751**
Solvonuk, P. F., 152; **614**
Somogyi, M., 289; **832**
Sonne, J. C., 290; **1036**
Sourkes, T. L., 290; **712**
Southworth, J. L., 336; **55**
Speck, R. S , 428; **140**
Spector, A., 301; **895**
Spector, S., 234; **896**
Spencer, J. N., 392; **1204**
Spencer, M. P., 152; **187**
Sperling, Gladys, 427; **1487**
Sperry, W. M., 258; **1020**
Spicer, S. S., 152; **615**
Spiegel, E. A., 83, 176; **581, MP**
Spiegel-Adolf, M., 290; **1107**
Spiegel-Adolf, Mona, 290; **902**
Spinks, J. W. T., 152; **614**
Spitzer, J. J., 170; **481**
Spooner, C., 321; **1173**
Sprague, J. M., 23, 152; **226, 227**
Spraragen, S. C., 4; **785**
Springer, Charlotte, 318; **1264**
Sprinson, D. B., 286; **929**
Sprunt, D. H., 482; **1618**
Spruth, H. C., 433; **1506**
Srensek, S. E., 354, 392, 404; **1146, 1169, 1264**
Stadie, W. C., 291; **702**
Stadtman, E. R., 291; **1001**
Stadtman, Theressa C., 291; **639**
Stainsby, W., 177; **303**
Stait, R. O., 117; **594**
Stamler, J., 153; **106**
Stapleton, G., **139S**
Stare, F. J., 449; **1565**
Starr, I., 153; **278P, 301**
Stasilli, N. R., 86; **236**
Stavely, H. E., 488; **1108**
Stavitsky, A. B., 482; **1635**
Stavraky, G. W., 392; **1312**
Steele, A. C., 215; **988**
Steele, J. M., 92; **268**
Steelman, S. L., 292; **1025**
Steers, E., 374; **1342**
Stefanini, M., 154; **292**
Stefko, P. L., 322; **1176**
Steggerda, F. R., 154; **24**
Steigmann, F., 393; **1303**
Stein, E., 393; **1354**
Steinberg, B., 428; **1420**
Steinberg, D., 292; **985**
Steinhaus, A. H., 154; **616**
Stekol, J. A., 292; **651**
Stemler, F. W., 460, **566**
Stephanson, L., 180; **1077**
Stephenson, S. E., Jr., 106; **432**
Stepto, R. C., 423, 429; **1453, 1454**
Stern, H., 393; **1127**
Stern, J. R., 293; **994**
Stern, K., 465; **1641**
Sternberg, S. S., 225, 429; **1040, 1405**
Sternberg, W. H., 414, 429; **1400, 1444**
Stets, John F., 309; **1466**
Stevens, C. M., 293; **971**
Stevenson, J. A. F., 154; **38**
Stewart, D. I., 88; **98**
Stewart, Doris, 155; **254**
Stewart, L. H., 355; **1256**
Stewart, R. C., 293; **1039**
Stickney, J. C., 155; **617**
Stimmel, B. F., 294; **777**
Stirman, J. A., 110; **57**
Stock, A. H., 483; **1613**
Stoddard, M. B., 486; **1583**
Stoerk, H. C., 430; **1422**
Stokes, J., Jr., 467; **1619, 1651S**
Stokes, P., **279P**
Stokstad, E. L. R., 294; **660**
Stolen, Joyce, 94; **498**
Stone, W. L., III, 141; **371**
Stoner, E. K., 146; **27**
Stotz, E., 310; **960**
Stow, R. W., 155; **541**
Stagnell, R., 306; **417**
Straughn, W. R., 294; **953**
Strawitz, J. G., 393; **1394**
Strawn, D. A., 412; **1482**
Strehler, B. L., 295; **690**
Streltzov, L., 427; **1488**
Strickland, K. P., 277; **991**
Strobel, Phyllis L., 158; **618**
Strominger, J. L., 295; **852**
Strong, F. M., 186; **993**

Stroud, Agnes N., 155; **201**
Stroud, R. C., 155; **406**
Strub, I., 156; **341**
Struck, H. C., 167; **293**
Stuart, J. R., 274; **1044**
Stumpf, P. K., 295; **1056**
Stumpff, D. L., 98
Stuntz, S. E., 138; **410**
Sturtevant, F. M., Jr., 394; **1302**
Sullivan, Margaret J., 197; **768**
Summerson, W. H., 282; **1073**
Sun, D., 156, **93**
Sung, C. Y., 294, 401; **1178, 1179**
Supplee, Helen, 156; **68**
Sure, B., 456; **1518**
Surtshin, A., 157; **113**
Sutherland, G. B. B. M., 175; **333**
Sutherland, K., 429; **1454**
Sutherland, V. C., 328; **1331**
Sutton, E., 157; **135**
Svedmyr, A., 483; **1592**
Sveinsson, S. L., 141; **461**
Svigals, C. S., 54; **291**
Swann, H. E., Jr., 157; **413**
Swanson, Ann L., 926; **1003**
Swanson, Marjorie A., 296; **862**
Swanson, Pearl, 441, 442, 454, 457; **1493, 1520, 1544, 1545**
Swanson, R. E., 73; 120
Swanson, W. J., 181; **728**
Sweet, A. Y., 93; **208**
Swendseid, Marian E., 296; **1003**
Swcik, R. W., 157; **127**
Swift, M. N., 408; **1456**
Swift, R. W., 443; **1566**
Swift, Marguerite N., 158; **202**
Swim, H. E., 296; **915**
Swinyard, E. A., 327, 394, 401; **1115, 1117, 1118**
Swisher, S. N., 416; **1467**
Swiss, E. D., 395; **1246**
Sydentsricker, V. P., 287; **643**
Sydow, Virginia L., 395; **1205**
Syverton, J. T., 415, 470, 483; **1426, 1584, 1585**
Szego, Clara M., 13, 92; **178, 549**
Szent-Gyorgyi, A. G., 296; **327**
Szepsenwol, Josel, 158; **618**

Tabor, H., 374, 395; **931, 932**
Tacket, H. S., 17; **89**
Taeschler, M., 158; **397**
Taketa, S. T., 158; **202**
Tal, Chloe, 483; **1656**
Taliaferro, L. G., 484; **1629**
Taliaferro, W. H., 484; **1629**
Tallan, H. H., 297; **707**
Talmage, D., 466; **1632**
Talmage, D. W., 476, 484; **1628, 1631**
Talmage, R. V., 159; **60**
Talso, P. J., 380; **1158**
Tanaka, S., 90; **5**
Taplin, G. V., 396; **128**
Taplin, R. H., 119; **536**
Tappel, A. L., 297; **1006**
Tarr, H. L. A., 297; **847**
Tasaki, I., 30; **502**
Taterka, M., 247; **1093**
Tauber, H., 298; **628**
Taylor, C. B., 431; **1437**
Taylor, C. L , 159; **262**
Taylor, D. Jane, 351; **1340**
Taylor, H. L., 159; **304**
Taylor, J. D., 385, 396; **1120, 1211, 1346**
Taylor, M. W., 455; **1498**
Taylor, R. M., 160, 258, 388; **401, 1020, 1162**
Taylor, Wanda E., 256; **642**
Taylor, W. J., 111; **453**
Teasdall, R. D., 89, 160; **233, 584**
Teed, H., 350; **1333**
Teitelbaum, H. A., 160; **428**
Telfer, M. A., 215; **988**
Teng, Ching-Tseng, 227; **829**
Tennent, D. M., 298; **952**
Ten Pas, R. H., 100; **533**
Tepperman, Helen M., 160, 161; **452, 619**
Tepperman, J., 160, 161; **452, 619**
Terry, R., 430; **1419**
Tether, J. E., 382; **1278**
Teuber, H. L., 161; **442**
Tew, J. T., 221; **1261**
Thannhauser, S. J., 283; **907**
Thayer, S. A., 232; **934**
Thaysen, J. H., 142, 161; **43, 44**
Therien, Mercedes, 38; **321**
Thienes, C. H., 397; **1232**
Thoma, R. W., 298; **723**
Thomas, J. E., 29; **31**
Thomas, Joan M., 329; **1254**
Thomas, L., 478, 484; **1655, 1659**
Thomas, L. E., 306; **863**
Thomas, P. E., 162; **34**
Thomas, R. C., 305; **825**
Thompson, D. D., 162; **191**
Thompson, Millie, 262; **883**
Thompson, R. L., 485; **1616**
Tidball, C. S., 162; **147**
Tidwell, H. C., 298; **882**
Tietze, F., 265; **1072**
Tigerman, Blanche, 110; **424**
Tillottson, R. F., 65; **157**
Tillson, Elizabeth K., 13; **117**
Tishkoff, G. H., 299; **636**
Titus, H. L., 432; **1445**
Titus, P., 15; **356**
Tobias, C. A., 408; **1456**
Tobias, J. M., 19; **313**
Tocantins, L. M., 72; **415**
Toennies, G., 286; **920**
Togashi, S., 365; **1296**
Tolbert, N. E., 299; **802**
Toman, J. E. P., 162, 343; **306, 1121**
Toman, M. E., 162; **306**
Tompkins, Edna H., 430; **1448**
Tompkins, R. G., 163; **158**
Toporek, M., 299; **657**
Topper, Y. J., 299; **767**
Torda, Clara, 163, 397; **320, 1395**
Tornaben, J. A., 448; **1574**
Tosteson, D. C., 163; **207**
Totter, J. R., 295, 300; **690, 839**
Tourtellotte, W. W., 397; **1151**
Towbin, A., 370; **1364**
Towbin, Catherine C., 143; **1068**
Travell, Janet, 164; **163**
Travers, J. J., 457; **1513**
Travis, A., 176; **438**
Treffers, H. P., 477; **1645**
Truant, A. P., 397; **1323**
Tucker, D., 109; **228**
Tullar, P. E., 398; **1329**
tum Suden, Caroline, 164; **379**
Tureman, J. R., 398; **1213**
Turner, L. B., 93; **208**
Turner, R. H., 220; **872**
Tuttle, W. W., 164; **342**
Tvede, K. M., 398; **1260**
Twarog, Betty M., 164; **403**
Tyler, D. B., 165; **380**
Tyler, Myra D., 377; **1128**
Tyner, Evelyn P., 300; **678**
Tytell, A. A., 283; **924**
Tyree, E. B., 149; **612**

Udenfriend, S., 300, 319, 326; **928, 288, 1287**
Umbarger, H. E., **922**
Ungar, G., 165; **390**
Unna, K. R., 382; **1278**
Untracht, S., 479; **1658**
Upton, A. C., 328, 430; **1262, 1408**

Valliant, Jeanne, 431; **1429**
Van Bruggen, J. T., 235, 301; **1061, 1062**
VanBuren, Marceil D., 452; **1497**
Vanatta, J. C., 165; **239**
Vanderbie, J. H., 30; **348**
Van Korff, R., 185, 222; **993, 996**
Van Itallie, T. B., 457; **1569**
Van Liere, E. J., 155; **617**
Van Maanen, E. F., 398; **1284**
Van Meter, J. C., 301; **895**
Van Middlesworth, L., 166; **126, 620**
Van Orden, L. S., 316; **1008**
Van Pilsum, J. F., 301; **1002**
van Wagenen, Gertrude, 166; **621**
Van Wagtendonk, W. J., 302; **945**
Vars, H. M., 116, 211; **33, 144**
Vawter, G. F., 17, 431; **39, 1437**
Veil, E. G., 165; **405**
Velardo, J. T., 50; **180**
Velick, S., 226; **1000**
Venning, Eleanor H., 302; **942**
Vennesland, B., 211; **856**
Verder, Elizabeth, 387; **1201**
Verney, Ethel, 483; **1613**
Vernier, V. G., 399; **MP**
Vernon, L. P., 253; **963**
Vestal, Betty L., 180; **1077**
Vestling, C. S., 214; **956**
Vetper, J. W., 431; **1477**
Vialpando, A. B., 167; **293**
Victor, J., 431; **1429**
Vignos, P. J., Jr., 399; **836**
Villee, C. A., 225, 302; **671, 1086**
Vishniac, W., 302; **799**
Visscher, M. B., 15, 73; **120, 296, 1526S**
Visser, D. W., 478; **1581**
Vitale, J. J., 457; **1534**
Vitucci, J. C., 303; **724**
Vogel, H. J., 485; **970**
Volk, H., 357; **1286**
Volkin, E., 303; **906**
Volkmann, Carol M., 324; **722**
von Haam, E., 432; **1445**

Wachstein, M., 432; **1431**
Waelsch, H., 304; **1070**
Wager, O. A., 485; **1633**
Wagle, G., 399; **1306**
Wagman, I. H., 167; **234**
Wagner, C., 134; **305**
Wagner, H. G., 65; **507**
Wagner, J. C., 431; **1429**
Wagner, R. H., 420; **1412**
Wagner-Jauregg, T., 224; **1051**
Wahlgren, Nancy, 351, 388; **1319, 1392**
Wainio, W. W., 304; **961**
Waisman, H. A., 304; **665**

Wakerlin, G. E., 66, 145; **2, 575**
Wakim, K. G., 167; **53**
Walaszek, E. J., 320; **1365**
Wald, G., 153, 304; **508, 706**
Wald, N., 169; **422**
Waldmann, E. B., 173; **223**
Walker, A. E., 104; **1**
Walker, Avis R., 305; **816**
Walker, J. M., 42, 305; **145, 816**
Walker, S. M., 168, **434**
Wall, J. S., 305; **1033**
Wall, P., 124; **229**
Walsh, F., 95; **97**
Walsh, L. B., 432; **1481**
Walter, G., 168; **32**
Walton, R. P., 334, 348, 385; **1160, 1165, 1325**
Walts, L., 337; **1376**
Wang, C. H., 305; **825**
Wang, H. H., 169; **219**
Wang, K. M., 433; **1479**
Wang, L. K., 159; **60**
Wang, S. C., 51, 112, 400; **215, 446, 1153**
Wang, T. P., 244; **759**
Wang, T. Y., 433; **1479**
Wang, Tung-Yue, 306; **863**
Ward, Elsie N., 486; **1594**
Ward, R., 486; **1586**
Ware, A. G., 306; **417**
Warner, E. D., 410; **1409**
Warner, G. F., 35; **79**
Warner, H. R., 175; **365**
Warner, I., 306; **877**
Warner, R. C., 248; **625**
Warren, J. V., 37; **369**
Warren, S., 407; **1451**
Warshaw, L., 352; **1223**
Wase, A. W., 307; **736**
Wasserman, K., 168; **141**
Waters, L. L., 413; **1435**
Watts, D. T., 400; **1350**
Waud, R. A., 400; **1167**
Waugh, D. F., 168; **634**
Way, E. L., 394, 401; **1178, 1179**
Weaver, J., 352; **1223**
Weaver, L. C., 401; **1118**
Webb, R. L., 169; **MP**
Webber, W. W., 121; **597**
Wégria, R., 169; **219**
Weil, L., 307; **1074**
Weinbach, E. C., 307; **1018**
Weiner, I. H., 70; **444**
Weiner, M., 169, 329; **422**
Weinhouse, S., 216, 257; **647, 1058**
Weinman, E O., 44; **66**
Weiss, B., 170; **1026**
Weiss, H. S., 40; **361**
Weiss, Iris, 53; **471**
Weiss, Roslyn J., 451; **1556**
Weiss, S., 292; **651**
Weiss, T. J., 307; **917**
Weissbach, A., 308; **837**
Weissman, N., 410; **1447**
Weissmann, B., 308; **766**
Weisz, P., 142; **609**
Welch, A. D., 308; **666**
Weld, C. B., 170; **481**
Weller, T. H., 467, 486; **1583, 1591**
Wells, G. S., 275; **677**
Wells, J. A., 380; **1203**
Wendel, W. B., 205; **1083**
Werder, A. A., 415, 470; **1426, 1584**
Werner, Attie Y., 170; **370**
Werner, G. H., 480; **1604**
Werthessen, N. T., 143; **467**
Wessler, S., 309; **480**
West, E., 118; **112**
West, E. S., 301; **1062**
West, H. D., 309; **823, 1109**
West, J. W., 47; **72**
Westfall, B. A., **1396**
Westheimer, F. H., 211; **856**
Weston, R. E., 60, 171; **192, 299**
Westphal, U., 309; **1466**
Wexler, Shirley, 329
Whalen, W. J., 58; **485**
Wheelwright, Frances, 350; **1207**
Whillans, M. G., 76; **353**
Whipple, G. H., 299; **636**
White, C. S., 98; **539**
White, C. W., Jr., 171; **427**
White, H. L., 157; **113**
White, Hilda, 449; **1565**
White, J., 310, 395; **931, 1501**
White, J. M., Jr., **1220**
White, Marcia R., 344; **1380**
White, R. P., 171; **14**
Whiteside, J. A., 88; **519**
Whitmore, J. J., 335; **1259**
Whittenberger, J. L., 172; **414**
Wick, A. N., 310; **830**
Widmer, C., Jr., 310; **960**
Wiebelhaus, V. D., 401; **1194**
Wiercinski, F. J., 172; **334**
Wiersma, C. A. G., 172; **253**
Wiesbader, H., 365; **1296**
Wiese, Hilda F., 445, 458; **1563, 1564**
Wiggers, H. C., 144; **159**
Wiggins, W. S., 123; **190**
Wikler, A., 346, 402; **1185, 1397, MP**
Wilber, C. G., 111, 112; **86, 247**
Wilde, W. S., 173; **134, 282P**
Wilhelmj, C. M., 173; **223**
Williams, E. F., Jr., 230; **730**
Williams, F., 57; **70**
Williams, H. H., 439; **1491**
Williams, J. H., 301, 303; **724, 895**
Williams, J. N., Jr., 190; **739**
Williams, M., 101; **398**
Williams, R. H., 420; **1468**
Williams, T. L., 22; **552**
Williams, W. J., 311; **1034**
Williams, W. L., 208, 458; **732, 1505**
Williams, W. L., Jr., 413; **1446**
Williams, W. Lane, 173, 402, 412, 433; **622, 1398, 1483, 1490**
Williamson, M. B., 311; **1075**
Wills, J. H., 322, 365, 388; **1172, 1233, 1257**
Wills, Joyce, 75; **211**
Wilson, Hildegard, 311; **941**
Wilson, I. B., 4, 312; **256, 719**
Wilson, J. E., 342, 403; **1134, 1313**
Wilson, J. S., 37; **369**
Wilson, J. W., 433; **1473**
Wilson, P. W., 305; **1033**
Wilson, W. C., 154; **616**
Winbury, M. M., 403; **1132**
Winn, H. J., 486; **1668**
Winnick, T., 96; **125**
Winter, W. J., 345; **1334**
Wintrobe, M. M., 438, 445; **1561, 1562**
Winzler, R. J., 312; **1024**
Wissler, R. W., 434; **1432**
Wiswelp, O. B., 312; **337**
Witt, G., 388; **1276**
Witter, R. F., 313; **885, 1110**
Wittler, Ruth G., 313; **949**
Wnuck, A. L., 403; **1279**
Woehrmann, Mary L., 382; **1198**
Wolf, A. V., 173; **623**
Wolf, E. A., 174; **28**
Wolf, Rosalie S., 131; **389**
Wolff, H. G., 163, 397; **320, 1395**
Wolfson, W. Q., 213, 388; **1027**
Wollack, A., 369; **1181**
Wollman, S. H., 174; **456**
Wolterink, L. F., 174; **210**
Womack, Sally, 353; **1356**
Wood, D. L., 175; **333**
Wood, E. H., 163, 175; **158, 365**
Wood, H. G., 313; **914**
Wood, J. L., 314, 482; **818, 1618**
Woodard, G., 354, 392, 404; **1146, 1169, 1269**
Woodard, P. H., 171; **14**
Woodbury, D. M., 404; **1116**
Woodbury, J. W., 175; **230**
Woodbury, L. A., 175, 401; **425, 1118**
Woodbury, R. A., 347, 356; **1229, 1362**
Woodman, E., 321; **1173**
Woodward, D. J., 404; **1345**
Wool, Glorye N., 139; **494**
Woolley, D. W., 258, 458; **756, 1537**
Woolsey, C., 176; **438**
Wright, C. S., 462, 486; **1668, 1669**
Wright, D. L., 385; **1155**
Wright, E. W., 94; **169**
Wright, G. W., 16, 210; **469, 472**
Wu, C., 207, 314; **918, 919**
Wu, Daisy Yen, 314; **822**
Wu, H., 314; **822**
Wulzen, Rosalind, 86; **347**
Wycis, H. T., 176; **MP**
Wynn, M. F., 366, 405; **1138, 1314**

Yager, R. H., 469; **1622**
Yalow, A. A., 184; **810**
Yamasaki, Martha, 250; **783**
Yanagi, G. N., 262; **989**
Yanari, S., 315; **687**
Yang, S. P., 442; **1520**
Yee, Y. S., 189; **1080**
Yelnosky, J., 393; **1127**
Yen, C.-Y., 372; **1387**
Yonce, L., 86; **347**
Yonkman, F. F., 320, 383; **1131, 1222**
Young, A. C., 22, 139, 176; **91, 351, 542**
Young, Emily M., 282; **1105**
Young, E. R., 106; **432**
Youngner, J. S., 480, 486; **1594, 1595**
Yphantis, D. A., 168; **634**
Yu, T. M., 149; **49**
Yuile, C. L., 430; **1419**
Yushok, W. D., 176; **525**

Zacco, M., 481; **1608**
Zack, M. M., 372; **1463**
Zamenhof, S., 315; **910**
Zarrow, M. X., 131, 265; **245, 779**
Zatman, L. J., 315; **747**
Zauder, H. L., 405; **1184**
Zeckwer, Isolde T., 177; **517**
Zeller, E. A., 316; **1008, 1111**
Zeman, F. D., **1529S**
Zerbe, Joan W., 211; **33**
Zierler, K. L., 177; **303**
Ziff, M., 405; **1270**
Zilversmit, D. B., 34, 147; **65, 610**
Zipser, A., 49; **59**
Zittle, C. A., 316; **720**
Zubrod, C. G., 367; **1341**
Zweifach, B. W., 7, 147, 177; **12, 19, 22**